AIWA®

S/M Code No. 86-030
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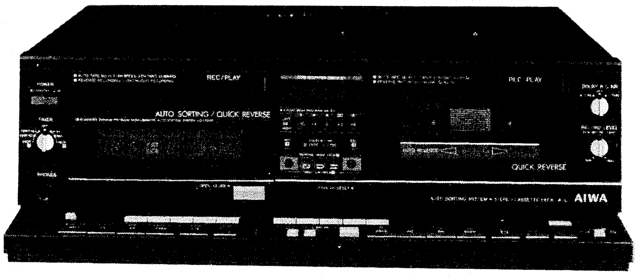
SERVICE MANUAL

MODEL NO.

STEREO CASSETTE DECK

AD-A70

This service manual contains service information for only altered and added sections of Model AD-A70. If requiring other service information, see the service manual of Model FX-A770.



TYPE. H, U, E

SPECIFICATIONS

Type	Stereo cassette tape deck
Track format	4 tracks 2 channels
Power supply	
AD-A70U	AC120V, 60 Hz
AD-A70E	AC 220 V, 50/60 Hz
AD-A70H	AC 120 V/220 V/240 V switchable, 50/60 Hz
Power consumption	30 W
Frequency response	METAL tape: 20 – 16,000 Hz CrO₂ position tape: 20 – 15,000 Hz NORMAL tape: 20 – 14,000 Hz
Signal-to-noise ratio	73 dB (METAL tape DOLBY C NR ON)
Wow and flutter	According to DIN 45 500 0.16% 0.06% (WRMS)

Tape speed	4.8 cm/sec. (1-7/8 ips) 9.5 cm/sec. (high speed dubbing only)
Recording system	AC bias (frequency 100 kHz)
Erase system	AC erase
Motors	Capstan: DC servo motor × 2 Auto sorting: DC motor × 2
Head	Recording/playback head × 2 Erase head × 2
Inputs	LINE IN maximum input sensitivity: 50 mV (over 50 kΩ)
Outputs	LINE OUT standard output level: 380 mV (0 VU); suitable load impedance: over 50 kΩ
Dimensions	330(W) × 106.5(H) × 346(D) mm
Weight	6 kg
Accessories	Sorting cartridge (2) Stereo pin cord (2)

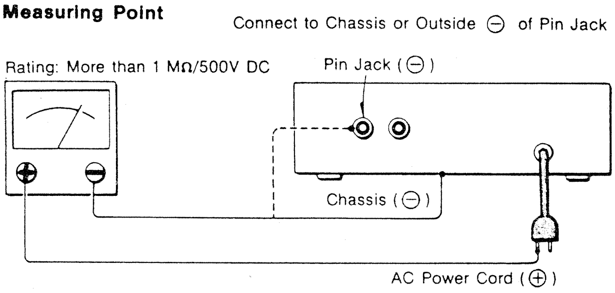
- Design and specifications are subject to change without notice.

- The Dolby noise reduction system is provided under licence from Dolby Laboratories.
- Dolby and "Double D" are trademarks of Dolby Laboratories.

Follow the instructions carefully, which will allow the user to optimise the products' performance and give many years of service.

1. **No scratch and melting shall be made to covered lead-wires of an a.c. primary circuit including mains leads.**
2. **No illegibility shall be given to the specification plate, the caution labels, the fuse labels and others.**
3. **When, on pattern sides of circuit boards, additional repair-parts have been made up, the parts shall be firmly glued to circuit boards or other components, unless the parts can be attached firmly.**
4. **The following matters shall be maintained as they are, when repairing.**
   1) Soldering of lead-wire ends
      * Care should be taken of the space distance in an a.c. primary circuit as well as soldering.
   2) Wiring and holding of lead-wires with wire-clips and binders
   3) Materials of lead-wires
      * e.g.; For UL models, lead-wires to be used shall be approved or accepted by the UL.
   4) Location of all kinds of insulators
   5) Setting of voltage selector switch
      * Set the Voltage Selector Switch to 240V, 220V, or 120V, According to your Local Voltage.
5. **After repaired, the insulation resistance or leakage current shall be measured with 500 ± 5V D.C and shall be not less than 1MΩ.**

Measuring Point


Connect to Chassis or Outside ⊖ of Pin Jack
Rating: More than 1 MΩ/500V DC
Pin Jack (⊖)
Chassis (⊖)
AC Power Cord (⊕)

6. **General instructions for mechanism repair**
   1) The heads, capstan and pinch roller shall be cleaned of good quality alcohol after repaired, because dirty heads shall cause distorted sounds while dirty capstan and pinch roller shall occur wow/flutter and take-up fault.
   2) Lubricants been stained the surfaces of transmitting portion of the belts, idlers, capstan and pinch roller shall be removed, because slippery and faulty tape travel shall be caused.
   3) When oiling, only one or two drops shall be applied so as not to run over and be dispersed. Note should be taken of the metal fitting for the capstan and rotating portions of the idlers and pinch-roller, especially.
   4) E-rings and poly slider washers shall be replaced with new ones, if once those have been removed. – No re-utilization due to unreliability.
   5) Regular spare-parts shall always be used for repair, because using irregular parts and tampering with the products shall cause deterioration, mulfunction and damage.

Caution for Repairing

Be sure to set the unit into the follwing states when the repairing has been completed.

1) Loading of the cassette will be started when the power supply is turned on and the PLAY button of deck I is pressed.
Therefore, the power supply should be cut off when the cassette box assembly has been mounted onto the mechanism.

2) Install the fixing screws for transportation.

ELECTRICAL MAIN PARTS LIST

- ⋆ -mark means less required items and availabilities may be limited.
- +++ mark denotes a component of assembled part which part code is represented by a previonsly stated component.

CAPACITORS
No mark, U, UF: μF
P, PF : pF

COILS
MMH: mH
UH : μH

FUSE
MMA:mA

Ref.No.	Part.No.	Description
=== IC ===		
	87-020-454	IC,DM6851
	82-197-642	IC,HD38702A33
	82-104-601	IC,HD38702A37
	87-020-028	IC,IR2E27A
	87-020-261	IC,LA6358S
	82-110-640	IC,LC6523C-798,A
	82-110-641	IC,LC6523C-799,B
	82-110-643	IC,LM6402G-1959
	87-020-140	IC,L78M12
	87-020-553	IC,M5201
	87-020-157	IC,M5210L
	87-027-895	IC,M5218L
	87-027-909	IC,M54523P
	87-027-656	IC,TC4066BP
	87-027-827	IC,TC4069UBP
	87-020-079	IC,TD62555S
	87-027-538	IC,UPD4069
=== TRANSISTOR ===		
	89-110-155	TRANSISTOR,2SA1015,GR
	89-113-460	TRANSISTOR,2SA1346
	89-113-584	TRANSISTOR,2SA1358Y
	89-108-854	TRANSISTOR,2SA885 R
	89-109-521	TRANSISTOR,2SA952K
	89-318-155	TRANSISTOR,2SC1815,GR
	89-318-156	TRANSISTOR,2SC1815,BL
	89-320-011	TRANSISTOR,2SC2001K
	89-327-855	TRANSISTOR,2SC2785E
	89-411-110	TRANSISTOR,2SD1111
	89-411-530	TRANSISTOR,2SD1153
	89-412-753	TRANSISTOR,2SD1275
	89-412-763	TRANSISTOR,2SD1276QP
	89-413-023	TRANSISTOR,2SD1302ST
=== MAIN CIRCUIT BOARD SECTION ===		
PCB-A	*	MAIN CIRCUIT BOARD
BPF1	* 82-198-715	FILTER MPX (100K)
BPF2	* 82-193-715	FILTER MPX (100K)
C3	* 87-018-123	CAP,CERA-SOL SS 220P
C4	* 87-018-123	CAP,CERA-SOL SS 220P
C7	* 87-015-954	CAP,ELECT LL 10-16V
C8	* 87-015-954	CAP,ELECT LL 10-16V
C11	* 87-018-047	CAP,CERA-SOL S 0.01Y/16
C53	* 87-018-126	CAP,CERA-SOL SS 390P
C54	* 87-018-126	CAP,CERA-SOL SS 390P
C55	* 87-015-954	CAP,ELECT LL 10-16V
C56	* 87-015-954	CAP,ELECT LL 10-16V
C59	* 87-018-134	CAP,CERA-SOL SS 0.01
C143	* 87-010-260	CAP,ELECT 47-25V SME
C191	* 87-018-132	CAP,CERA-SOL SS 2200P
C192	* 87-018-132	CAP,CERA-SOL SS 2200P
C241	* 87-018-134	CAP,CERA-SOL SS 0.01
C242	* 87-018-102	CAP,CERA-SOL SS6.8P
C244	* 87-018-119	CAP,CERA-SOL SS 100P
C244	* 87-018-134	CAP,CERA-SOL SS 0.01
C247	* 87-018-134	CAP,CERA-SOL SS 0.01
C268	* 87-018-134	CAP,CERA-SOL SS 0.01
C283	* 87-018-102	CAP,CERA-SOL SS6.8P
C285	* 87-018-119	CAP,CERA-SOL SS 100P
C285	* 87-018-134	CAP,CERA-SOL SS 0.01
C287	* 87-018-105	CAP,CERA-SOL SS 12P

Ref.No.	Part.No.	Description
C325	* 87-018-203	CAP,CERA-SOL 8200P
C328	* 87-014-063	CAP,PP 1800P
C353	* 87-010-484	CAP,ELECT 2200/50 SRE (H,U ONLY)
C353	* 87-010-485	CAP,ELECT 2200/50 KRE (E ONLY)
C505	* 87-018-134	CAP,CERA-SOL SS 0.01
C550	* 87-018-134	CAP,CERA-SOL SS 0.01
C709	* 87-010-429	CAP,ELECT,SME 680-16V
C710	* 87-010-429	CAP,ELECT,SME 680-16V
C711	* 87-010-429	CAP,ELECT,SME 680-16V
C712	* 87-010-429	CAP,ELECT,SME 680-16V
C714	* 87-018-134	CAP,CERA-SOL SS 0.01
C715	* 87-018-134	CAP,CERA-SOL SS 0.01
C716	* 87-018-134	CAP,CERA-SOL SS 0.01
C717	* 87-018-134	CAP,CERA-SOL SS 0.01
C719	* 87-018-131	CAP,CERA-SOL SS 1000P
D141	87-020-110	DIODE 1SS177
D142	87-020-110	DIODE 1SS177
D143	87-020-110	DIODE 1SS177
D144	87-020-110	DIODE 1SS177
D145	87-020-110	DIODE 1SS177
D146	87-020-110	DIODE 1SS177
D147	87-020-110	DIODE 1SS177
D171	87-027-702	DIODE,ZENER HZ6C2L
D214	87-020-110	DIODE 1SS177
D281	87-020-110	DIODE 1SS177
D321	87-020-110	DIODE 1SS177
D351	87-020-110	DIODE 1SS177
D352	87-020-025	DIODE 2B4B41,LC-2
D353	87-020-123	DIODE DS446
D354	87-020-123	DIODE DS446
D356	87-027-365	DIODE S5277B
D357	87-020-123	DIODE DS446
D401	87-020-110	DIODE 1SS177
D402	87-020-110	DIODE 1SS177
D403	87-020-110	DIODE 1SS177
D404	87-020-110	DIODE 1SS177
D405	87-020-110	DIODE 1SS177
D406	87-020-110	DIODE 1SS177
D407	87-020-110	DIODE 1SS177
D408	87-020-110	DIODE 1SS177
D409	87-020-110	DIODE 1SS177
D410	87-020-110	DIODE 1SS177
D411	87-020-110	DIODE 1SS177
D412	87-020-110	DIODE 1SS177
D451	87-027-405	DIODE,ZENER RD2.2EB
D452	87-020-110	DIODE 1SS177
D453	87-020-110	DIODE 1SS177
D454	87-027-332	DIODE,ZENER HZ6B1L
D455	87-027-332	DIODE,ZENER HZ6B1L
D456	87-020-110	DIODE 1SS177
D457	87-020-110	DIODE 1SS177
D458	87-027-332	DIODE,ZENER HZ6B1L
D459	87-020-110	DIODE 1SS177
D460	87-020-110	DIODE 1SS177
D461	87-027-332	DIODE,ZENER HZ6B1L
D475	87-027-332	DIODE,ZENER HZ6B1L
D522	87-020-110	DIODE 1SS177
D551	87-020-110	DIODE 1SS177
D553	87-020-110	DIODE 1SS177
D701	87-020-110	DIODE 1SS177
D702	87-020-123	DIODE DS446
D703	87-020-123	DIODE DS446
D704	87-020-123	DIODE DS446
D705	87-020-123	DIODE DS446
D706	87-020-110	DIODE 1SS177

Ref No.	Part No.	Description
D707	87-020-123	DIODE DS446
D708	87-020-123	DIODE DS446
D709	87-020-110	DIODE 1SS177
D710	87-020-110	DIODE 1SS177
D711	87-020-110	DIODE 1SS177
D714	87-020-123	DIODE DS446
D715	87-020-110	DIODE 1SS177
D716	87-020-123	DIODE DS446
D718	87-020-110	DIODE 1SS177
D719	87-020-123	DIODE DS446
D720	87-020-110	DIODE 1SS177
D721	87-020-110	DIODE 1SS177
D722	87-020-110	DIODE 1SS177
D723	87-020-110	DIODE 1SS177
D724	87-020-110	DIODE 1SS177
D725	87-020-110	DIODE 1SS177
D726	87-020-110	DIODE 1SS177
D727	87-020-110	DIODE 1SS177
D728	87-020-110	DIODE 1SS177
D733	87-020-110	DIODE 1SS177
D734	87-020-110	DIODE 1SS177
D740	87-020-110	DIODE 1SS177
⚠F1	87-035-358	FUSE T400MMA (E ONLY)
J701	87-049-420	(LINE)
J702	+++	(LINE)
J703	+++	(LINE)
J704	+++	(LINE)
L171	* 82-196-603	COIL,TRAP,100K
L172	* 82-196-603	COIL,TRAP,100K
L173	* 82-196-603	COIL,TRAP,100K
L174	* 82-196-603	COIL,TRAP,100K
L175	* 87-003-129	COIL 6.8MMH J
L176	* 87-003-129	COIL 6.8MMH J
L177	* 87-003-124	COIL 2.7MMH J
L178	* 87-003-124	COIL 2.7MMH J
L321	* 82-141-620	COIL OSC 100K
L801	* 87-003-136	MICRO INDUCTOR 47UH
L802	* 82-196-649	COIL OSC LC6502C
R359	* 87-029-366	RES,FUSIBLE 1/2W-4.7
R763	* 87-025-406	RES,MF 68 1W
R764	* 87-025-406	RES,MF 68 1W
R781	* 87-025-406	RES,MF 68 1W
R782	* 87-025-406	RES,MF 68 1W
⚠R791	87-029-019	RES,FUSIBLE 2.2 1/2W (EXCEPT H)
⚠R792	87-029-019	RES,FUSIBLE 2.2 1/2W (EXCEPT H)
RA701	* 82-104-617	RES,ARRAY 47K-8P
RA702	* 82-146-612	RES,ARRAY 47K-10P
RA703	* 82-110-692	RES,ARRAY 47K
RA704	* 82-110-690	RES,ARRAY 5P-10K
RA705	* 82-110-694	RES,ARRAY 3.9K
RA706	* 82-110-693	RES,ARRAY 10K
RY551	* 87-045-237	RELAY,GSA-237P 12VDC
RY552	* 87-045-237	RELAY,GSA-237P 12VDC
RY553	* 87-045-256	RELAY,12V,G2V-2
SFR1	* 87-021-861	SFR 2.2K
SFR2	* 87-021-861	SFR 2.2K
SFR3	* 87-021-865	SFR 22K
SFR4	* 87-021-865	SFR 22K
SFR5	* 87-021-865	SFR 22K
SFR6	* 87-021-865	SFR 22K
SFR51	* 87-021-861	SFR 2.2K
SFR52	* 87-021-861	SFR 2.2K

Ref No.	Part No.	Description
SFR53	* 87-021-864	SFR 10K
SFR54	* 87-021-864	SFR 10K
SFR321	* 87-021-868	SFR 100K
SFR322	* 87-021-868	SFR 100K
SFR323	* 87-021-868	SFR 100K
SFR324	* 87-021-868	SFR 100K
SFR171	* 87-021-742	SFR 10K
SFR172	* 87-021-742	SFR 10K
SFR173	* 87-021-742	SFR 10K
SFR174	* 87-021-742	SFR 10K
=== DOLBY CIRCUIT BOARD SECTION ===		
	87-020-132	DOLBY UNIT ASSY HA12058J (W/PCB-B)
=== TR CIRCUIT BOARD SECTION ===		
PCB-C	*	TR CIRCUIT BOARD
=== DOLBY SW 1 CIRCUIT BOARD SECTION ===		
PCB-E	*	DOLBY SW 1 CIRCUIT BOARD
S1	82-198-602	ROTARY- SW (DOLBY B-C NR)
=== VOLUME CIRCUIT BOARD SECTION ===		
PCB-F	*	VOLUME CIRCUIT BOARD
VR1	82-107-602	VOLUME 10K (RECORD LEVEL)
=== KEY CIRCUIT BOARD SECTION ===		
PCB-G	82-110-631	KEY CIRCUIT BOARD
D1	87-020-110	DIODE 1SS177
D2	87-020-110	DIODE 1SS177
D3	87-020-110	DIODE 1SS177
D4	87-020-110	DIODE 1SS177
D5	87-020-110	DIODE 1SS177
D6	87-020-110	DIODE 1SS177
D7	87-020-110	DIODE 1SS177
D8	87-020-110	DIODE 1SS177
D9	87-020-110	DIODE 1SS177
D10	87-020-110	DIODE 1SS177
D11	87-020-110	DIODE 1SS177
D12	87-020-110	DIODE 1SS177
D13	87-020-110	DIODE 1SS177
D14	87-020-110	DIODE 1SS177
D15	87-020-110	DIODE 1SS177
D16	87-020-110	DIODE 1SS177
D17	87-020-110	DIODE 1SS177
D18	87-020-110	DIODE 1SS177
D19	87-020-110	DIODE 1SS177
D20	87-020-110	DIODE 1SS177
D21	87-020-110	DIODE 1SS177
D22	87-020-110	DIODE 1SS177
D23	87-020-110	DIODE 1SS177
D24	87-020-110	DIODE 1SS177
D25	87-020-110	DIODE 1SS177
D26	87-020-110	DIODE 1SS177
D27	87-020-110	DIODE 1SS177
D28	87-020-110	DIODE 1SS177
D29	87-020-110	DIODE 1SS177
D33	87-020-110	DIODE 1SS177
D34	87-020-110	DIODE 1SS177
D35	87-020-110	DIODE 1SS177
D36	87-020-110	DIODE 1SS177

Ref.No.	Part.No.	Description
D37	87-020-110	DIODE 1SS177
D38	87-020-110	DIODE 1SS177
D39	87-020-110	DIODE 1SS177
LED40	* 87-020-170	LED SLP477B (PAUSE)
LED41	* 87-020-168	LED SLP177B (NORMAL,N)
LED42	* 87-020-168	LED SLP177B (HIGH,H)
LED43	* 87-020-169	LED,SLP-277B (REV PLAY)
LED44	* 87-020-169	LED,SLP-277B (PLAY)
LED45	* 87-020-170	LED SLP477B (PAUSE)
LED46	* 87-020-168	LED SLP177B (REC MUTE)
LED47	* 87-020-168	LED SLP177B (RECORD)
S1	87-031-771	TACT SW (PROGRAM)
S2	87-031-771	TACT SW (DOWN)
S3	87-031-771	TACT SW (UP)
S4	87-031-771	TACT SW (NEXT)
S5	87-031-771	TACT SW (MEMORY)
S6	87-031-771	TACT SW (NORMAL)
S7	87-031-771	TACT SW (HIGH)
S8	87-031-771	TACT SW (TAPE NO 1)
S9	87-031-771	TACT SW (TAPE NO 2)
S10	87-031-771	TACT SW (TAPE NO 3)
S11	87-031-771	TACT SW (TAPE NO 4)
S12	87-031-771	TACT SW (TAPE NO 5)
S13	87-031-771	TACT SW (BACK SKIP)
S14	87-031-771	TACT SW (REV PLAY)
S15	87-031-771	TACT SW (PLAY)
S16	87-031-771	TACT SW (FWD SKIP)
S17	87-031-771	TACT SW (STOP)
S18	87-031-771	TACT SW (PAUSE)
S19	87-031-771	TACT SW (RECORD)
S23	87-031-771	TACT SW (MS)
S24	87-031-771	TACT SW (REV PLAY)
S25	87-031-771	TACT SW (PLAY)
S26	87-031-771	TACT SW (MS)
S27	87-031-771	TACT SW (STOP)
S28	87-031-771	TACT SW (APUSE)
S29	87-031-771	TACT SW (REC MUTE)
S30	87-031-929	SLIDE SW (BLANK SKIP)
S31	87-031-724	SLIDE SW (DECK2, REVERSE MODE)
=== FL CIRCUIT BOARD SECTION ===		
PCB-H	*	FL CIRCUIT BOARD
C801	* 87-014-033	CAP,PP 100P
D801	87-020-110	DIODE 1SS177
D802	87-020-110	DIODE 1SS177
D803	87-027-332	DIODE,ZENER HZ6B1L
FL2	* 82-110-615	FL 5-BT 41ZK (DISPLAY)
S801	87-031-894	TACT SW (OPEN/CLOSE)
=== POWER SW CIRCUIT BOARD SECTION ===		
PCB-I	*	POWER SW CIRCUIT BOARD
S1	87-031-897	PUSH SW (POWER)
=== DOLBY SW 2 CIRCUIT BOARD SECTION ===		
PCB-J	*	DOLBY SW 2 CIRCUIT BOARD
S1	87-031-895	TACT SW (DOLBY-B)
S2	87-031-895	TACT SW (DOLBY-C)
=== SW2 CIRCUIT BOARD SECTION ===		
PCB-K	*	SW2 CIRCUIT BOARD
D4	87-020-110	DIODE 1SS177
S4	86-523-276	LEAF SW (CO SW)
=== COUNTER CIRCUIT BOARD SECTION ===		
PCB-L	*	COUNTER CIRCUIT BOARD
C651	* 87-014-033	CAP,PP 100P
D651	87-027-405	DIODE,ZENER RD2.2EB
D652	87-027-405	DIODE,ZENER RD2.2EB
D653	87-027-405	DIODE,ZENER RD2.2EB
D654	87-027-332	DIODE,ZENER HZ6B1L
FL1	* 82-198-601	FL,4ST-01ZSI 4DIGIT
=== LED CIRCUIT BOARD SECTION ===		
PCB-M	*	LED CIRCUIT BOARD
C601	* 87-015-968	CAP,ELECT SRE 4.7-16V
C602	* 87-015-968	CAP,ELECT SRE 4.7-16V
C603	* 87-015-965	CAP,ELECT 1-50 SRE
D624	87-020-110	DIODE 1SS177
LED601	* 87-027-543	LED,LN317GP (PEAK PROG. METER)
LED602	* 87-027-543	LED,LN317GP (PEAK PROG. METER)
LED603	* 87-027-543	LED,LN317GP (PEAK PROG. METER)
LED604	* 87-027-542	LED,LN217RP (PEAK PROG. METER)
LED605	* 87-027-542	LED,LN217RP (PEAK PROG. METER)
LED606	* 87-027-543	LED,LN317GP (PEAK PROG. METER)
LED607	* 87-027-543	LED,LN317GP (PEAK PROG. METER)
LED608	* 87-027-543	LED,LN317GP (PEAK PROG. METER)
LED609	* 87-027-542	LED,LN217RP (PEAK PROG. METER)
LED610	* 87-027-542	LED,LN217RP (PEAK PROG. METER)
LED621	* 87-027-542	LED,LN217RP (REC I)
LED622	* 87-027-542	LED,LN217RP (REC II)
LED623	* 87-020-399	LED,LN350GPH (▶)
LED625	* 87-020-399	LED,LN350GPH (◀)
LED626	* 87-027-542	LED,LN217RP (↻)
LED627	* 87-027-542	LED,LN217RP (⊃)
LED628	* 87-027-542	LED,LN217RP (⇄)
LED629	* 87-027-543	LED,LN317GP (B-TYPE)
LED630	* 87-027-542	LED,LN217RP (C-TYPE)
⚠R630	87-029-089	RES,FUSIBLE 4.7 1/4W (U ONLY)
S601	86-992-604	PUSH SW (COUNTER RESET)
=== MOTOR CIRCUIT BOARD SECTION ===		
PCB-N	*	MOTOR CIRCUIT BOARD
M4	81-505-604	REEL MOTOR (BANKING MOTOR)
=== SW3 CIRCUIT BOARD SECTION ===		
PCB-O	*	SW3 CIRCUIT BOARD
D1	87-020-110	DIODE 1SS177
S1	87-031-964	LEAF SW (BO SW)
=== SENSOR 1 CIRCUIT BOARD SECTION ===		
PCB-P	*	SENSOR 1 CIRCUIT BOARD
CP1	* 82-141-622	PHOTO REFLECTOR SP1216
=== POWER CIRCUIT BOARD SECTION ===		
PCB-Q	82-110-634	POWER CIRCUIT BOARD
⚠C365	* 87-019-112	SPARK KILLER 0.01E
⚠NF1	* 82-799-640	FILTER AC-Z (H ONLY)
⚠NF1	* 87-030-090	FILTER FKOB 160MH (U,E ONLY)
=== SW1 CIRCUIT BOARD SECTION ===		
PCB-S	*	SW1 CIRCUIT BOARD
D2	87-020-110	DIODE 1SS177
D3	87-020-110	DIODE 1SS177
S2	86-523-275	LEAF SW (BI SW)
S3	87-031-964	LEAF SW (GEAR SW)
=== DECK 1 CIRCUIT BOARD SECTION ===		
PCB-T	*	DECK 1 CIRCUIT BOARD
M1	87-045-235	MOTOR MMA6B2LW (DECK1)
S1	86-517-621	LEAF SW (ENA B)
S2	86-517-621	LEAF SW (ENA A)
S3	86-517-621	LEAF SW (CO)
S4	86-517-621	LEAF SW (MT)
S5	86-517-621	LEAF SW (CAST)
S6	87-031-874	LEAF SW (DECK1,DIRECT)
SFR1	* 87-021-824	SFR 10K(C) (DECK1)
SFR2	* 87-021-825	SFR 22K (DECK1)
SOL1	* 86-517-611	SOLENOID 2ME-1A (FR,DECK1)
SOL2	* 86-517-612	SOLENOID 2ME-1B (PLAY,DECK1)
=== DECK 2 CIRCUIT BOARD SECTION ===		
PCB-U	*	DECK 2 CIRCUIT BOARD
M2	87-045-235	MOTOR MMA6B2LW (DECK2)
S1	86-517-621	LEAF SW (ENA B)
S2	86-517-621	LEAF SW (ENA A)
S3	86-517-621	LEAF SW (CO)
S4	86-517-621	LEAF SW (MT)
S5	86-517-621	LEAF SW (CAST)
S6	87-031-874	LEAF SW (DECK2,DIRECT)
SFR1	* 87-021-824	SFR 10K(C) (DECK2)
SFR2	* 87-021-825	SFR 22K (DECK2)
SOL1	* 86-517-611	SOLENOID 2ME-1A (FR,DECK2)
SOL2	* 86-517-612	SOLENOID 2ME-1B (PLAY,DECK2)
=== TIMER CIRCUIT BOARD SECTION ===		
PCB-V	*	TIMER CIRCUIT BOARD
C703	* 87-010-101	CAP,ELECT 220-10V
C704	* 87-010-101	CAP,ELECT 220-10V
C711	* 87-010-101	CAP,ELECT 220-10V
D1	87-020-110	DIODE 1SS177
J1	82-191-649	JACK (PHONES)
R715	* 87-025-072	RES,MF 100-1W
S1	82-110-646	ROTARY SW (TIMER)
=== CP 1 CIRCUIT BOARD SECTION ===		
PCB-W	*	CP CIRCUIT BOARD
CP1	* 87-020-457	PHOTO SENSOR NJL-5144L
=== CP 2 CIRCUIT BOARD SECTION ===		
PCB-X	*	CP CIRCUIT BOARD
CP1	* 87-020-457	PHOTO SENSOR NJL-5144L
=== MISCELLANEOUS ===		
⚠	* 87-034-732	AC CORD,H50 (H ONLY)
⚠	* 87-034-731	AC CORD (U ONLY)
⚠	* 82-788-736	AC CORD (E ONLY)
⚠	* 87-085-189	AC CORD BUSHING U (U ONLY)
⚠	* 87-085-184	AC CORD BUSHING D (H ONLY)
⚠	* 87-085-185	AC CORD BUSHING (E ONLY)
M3	81-505-604	REEL MOTOR (LOADING MOTOR)
⚠PT1	* 82-110-602	TRANSFORMER PT,H (H ONLY)
⚠PT1	* 82-110-606	TRANSFORMER PT (U ONLY)
⚠PT1	* 82-110-603	TRANSFORMER PT (E ONLY)
RPH H-1	87-046-259	RPH HD425821RVJ (DECK1)
RPH H-2	87-046-259	RPH HD425821RVJ (DECK2)
⚠S3	87-031-586	ROTRY SW (VOLTAGE SELECTOR) (H ONLY)

⚠ Safety component symbol

This symbol is given to important parts which serve to maintain the safety of the product, and which are made to conform to special safety specifications. Therefore, when replacing a component with this symbol, make absolutely sure that you use a designated part.

IC handling precaution

The IC's construction makes this part susceptible to damage by static electricity and so take sufficient care in regard to following articles.

1. Need to be put on conductive sheet, to be put in a metallic box and to be wrapped by aluminium foil for transportation and deposit.
2. To use solder iron less than 40W (less than 260°C) of power consumption for soldering. But do not overheat more than 10 second.
3. Do not perform a conductivity test with a tester, etc. Refer to the circuit voltages of each part.

Note; Combination Circuit Board

The parts on the electrical parts list which are indicated by an asterisk (*) are supplied as one single combined circuit board. Therefore, they will no be supplied separately. If this becomes necessary, please order the entire circuit board.

Combination circuit board A 82-110-617

PCB-R	**82-110-618**	**PCB-F**	**82-110-624**
PCB-H	**82-110-619**	**PCB-I**	**82-110-625**
PCB-M	**82-110-620**	**PCB-A**	**82-110-626**
PCB-L	**82-110-621**	**PCB-A**	**82-110-627**
PCB-V	**82-110-622**	**PCB-A**	**82-110-628**
PCB-E	**82-110-623**	**PCB-C**	**82-110-629**

Combination circuit board B 82-110-608

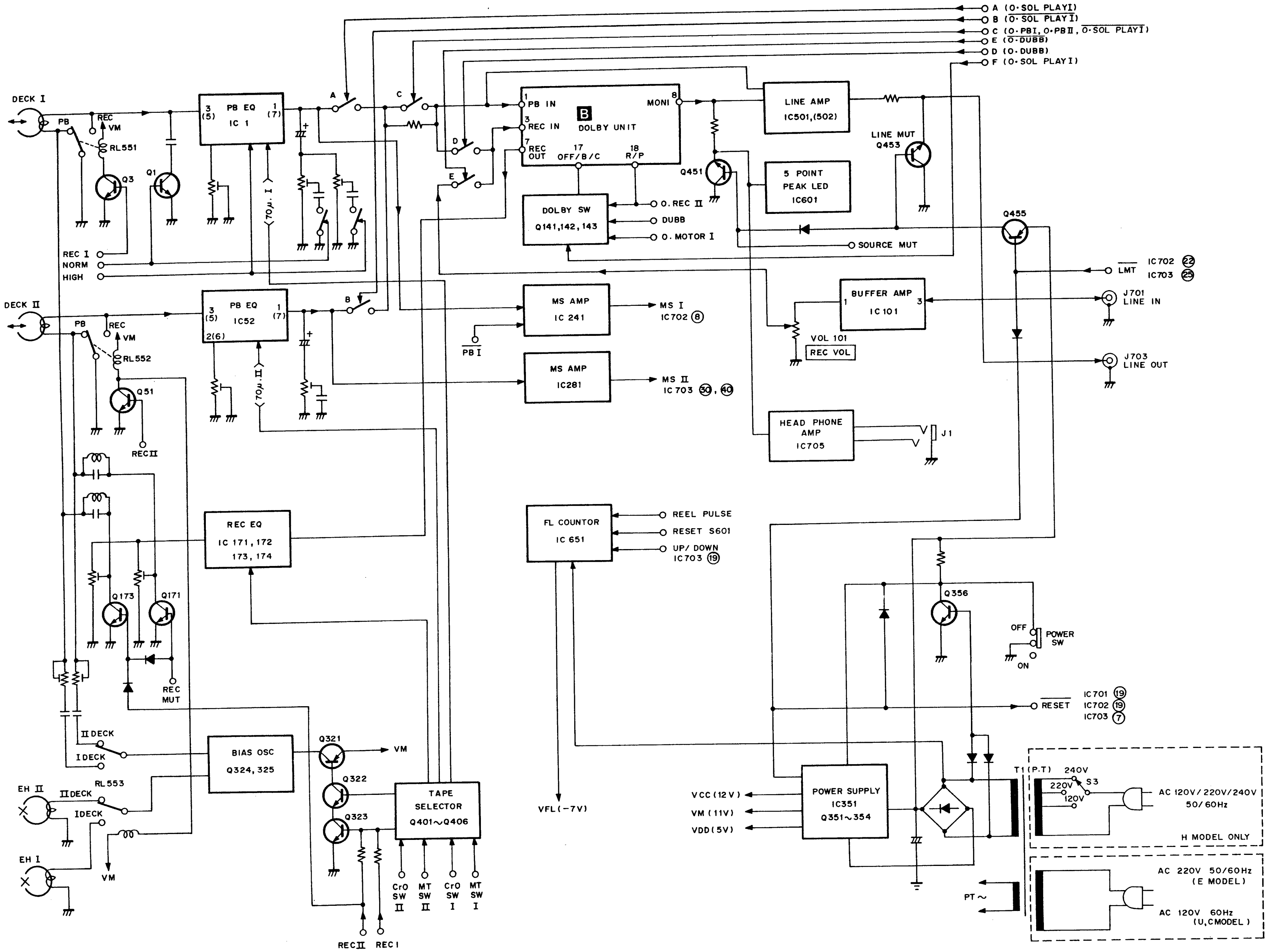
PCB-S	**82-110-609**	**PCB-K**	**82-110-612**
PCB-N	**82-110-610**	**PCB-O**	**82-110-613**
PCB-J	**82-110-611**	**PCB-P**	**82-110-614**

Combination circuit board C 86-517-601

PCB T, U 86-517-602

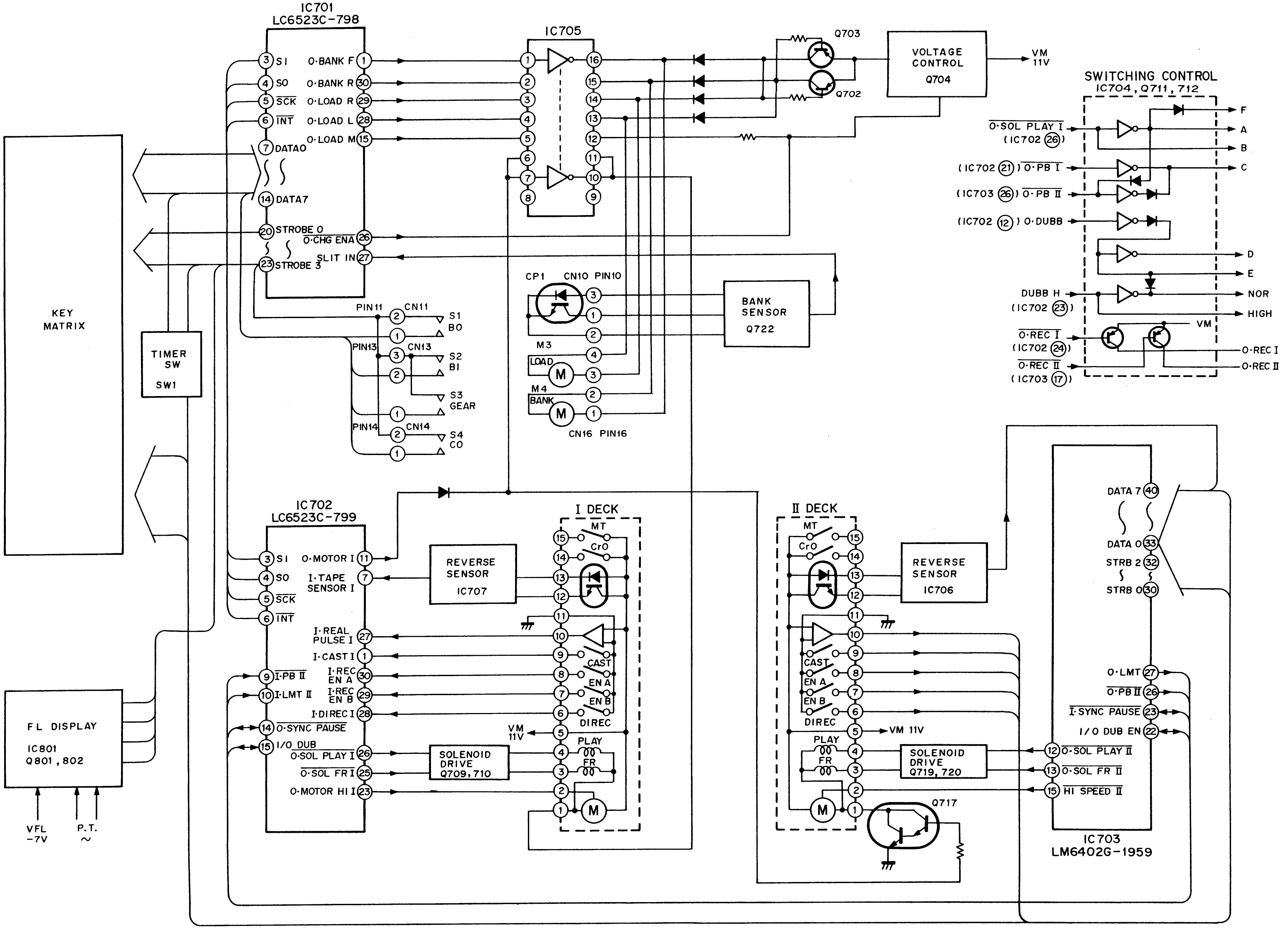
PCB W, X 86-517-603

BLOCK DIAGRAM

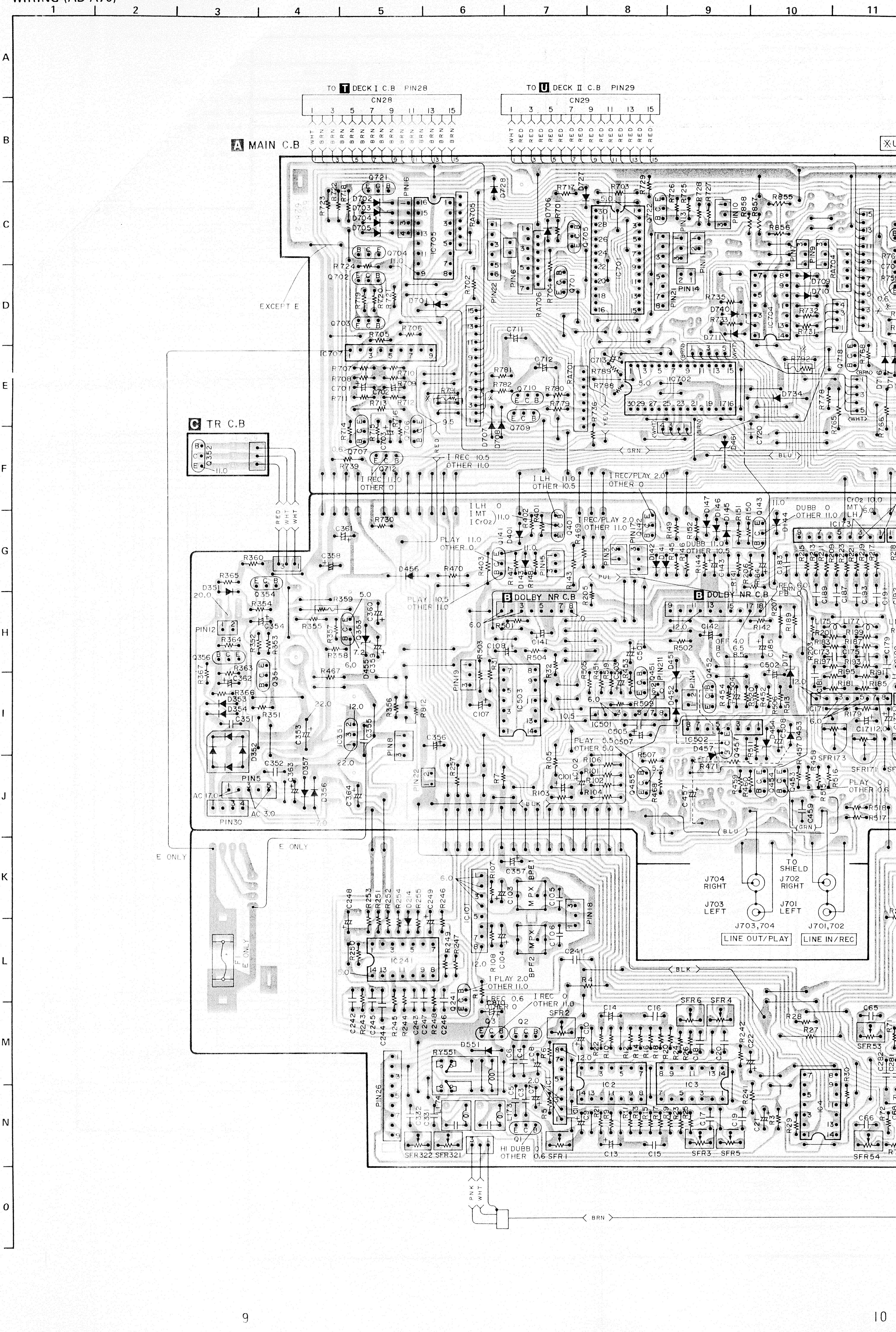


A (O·SOL PLAYI)
B (O·SOL PLAYI)
C (O·PBI, O·PBII, O·SOL PLAYI)
E (O·DUBB)
D (O·DUBB)
F (O·SOL PLAYI)
DECK I
PB
REC
VM
RL551
Q3
Q1
REC I
NORM
HIGH
PB EQ
IC 1
3 (5)
1 (7)
70μ I
A
C
D
E
B
1 PB IN
3 REC IN
7 REC OUT
17 OFF/B/C
18 R/P
8 MONI
B
DOLBY UNIT
DOLBY SW
Q141,142,143
O.REC II
DUBB
O.MOTOR I
LINE AMP
IC501,(502)
LINE MUT
Q453
Q451
5 POINT
PEAK LED
IC601
SOURCE MUT
Q455
IC702 ㉒
IC703 ㉕
LMT
BUFFER AMP
IC101
J701
LINE IN
VOL 101
REC VOL
J703
LINE OUT
DECK II
PB
REC
VM
RL552
Q51
REC II
PB EQ
IC52
2(6)
70μ II
MS AMP
IC 241
MS I
IC702 ⑧
PB I
MS AMP
IC281
MS II
IC 703 ㉚, ㊵
HEAD PHONE
AMP
IC705
J1
REC EQ
IC 171, 172
173, 174
Q173
Q171
REC
MUT
FL COUNTOR
IC 651
REEL PULSE
RESET S601
UP/ DOWN
IC703 ⑲
II DECK
I DECK
BIAS OSC
Q324, 325
Q321
VM
Q322
Q323
TAPE
SELECTOR
Q401~Q406
CrO SW II
MT SW II
CrO SW I
MT SW I
REC II
REC I
EH II
II DECK
RL553
I DECK
EH I
VM
VFL (-7V)
Q356
OFF
POWER SW
ON
RESET
IC701 ⑲
IC702 ⑲
IC703 ⑦
VCC (12V)
VM (11V)
VDD (5V)
POWER SUPPLY
IC351
Q351~354
T1 (P.T)
240V
S3
220V
120V
AC 120V/220V/240V
50/60Hz
H MODEL ONLY
PT ~
AC 220V 50/60Hz
(E MODEL)
AC 120V 60Hz
(U,C MODEL)

BLOCK DIAGRAM

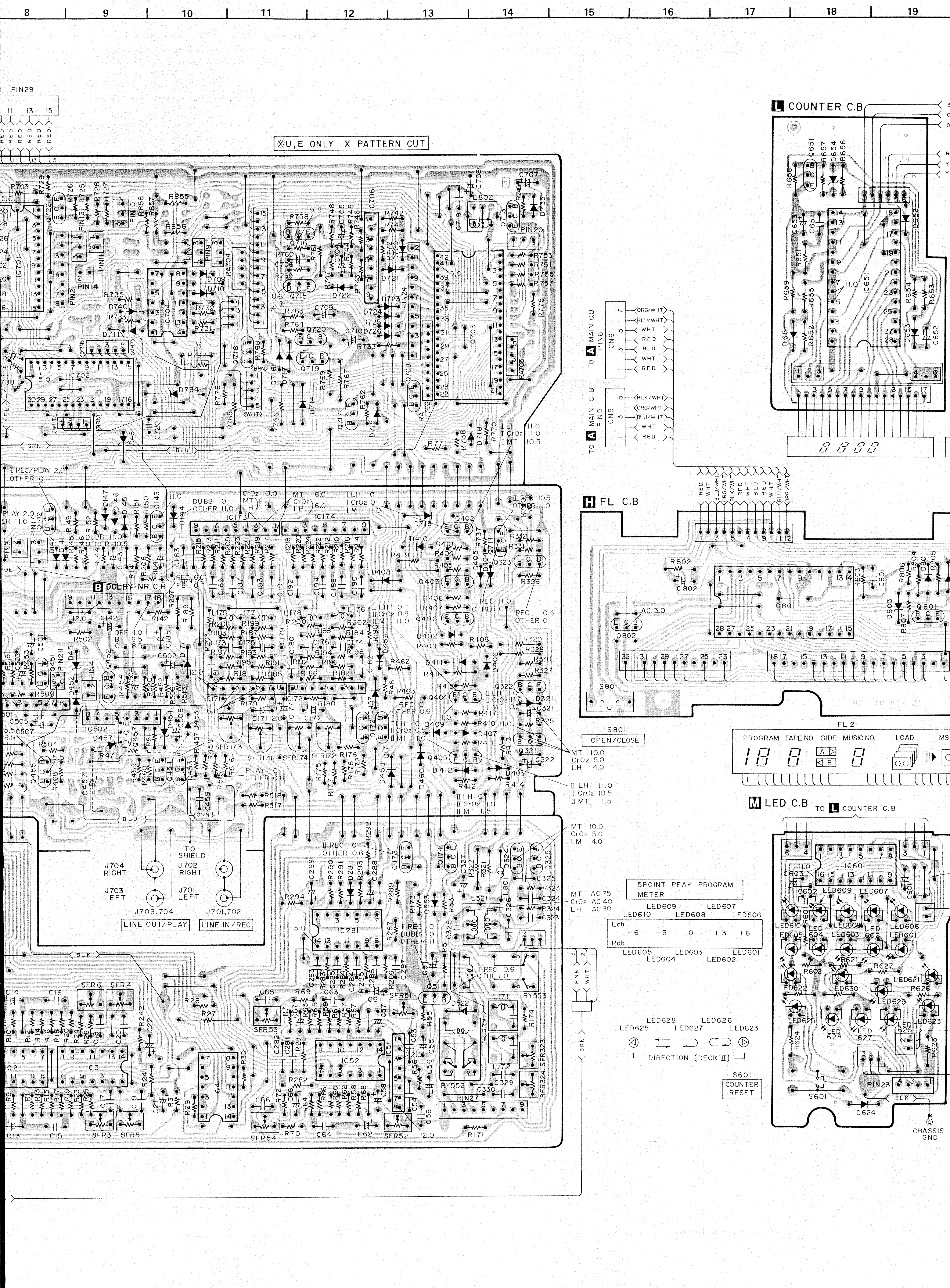

IC701
LC6523C-798
S I
SO
SCK
INT
DATA0
DATA7
STROBE 0
STROBE 3
O·BANK F
O·BANK R
O·LOAD R
O·LOAD L
O·LOAD M
O·CHG ENA
SLIT IN
IC705
Q703
Q702
VOLTAGE CONTROL
Q704
VM 11V
SWITCHING CONTROL
IC704, Q711, 712
O·SOL PLAY I (IC702 ㉖)
(IC702 ㉑) O·PB I
(IC703 ㉖) O·PB II
(IC702 ⑫) O·DUBB
DUBB H (IC702 ㉓)
O·REC I (IC702 ㉔)
O·REC II (IC703 ⑰)
F
A
B
C
D
E
NOR
HIGH
VM
O·REC I
O·REC II
KEY MATRIX
TIMER SW
SW1
PIN11
CN11
S1 BO
PIN13
CN13
S2 BI
S3 GEAR
PIN14
CN14
S4 CO
CP1
CN10 PIN10
M3
LOAD
M4
BANK
CN16 PIN16
BANK SENSOR
Q722
IC702
LC6523C-799
O·MOTOR I
I·TAPE SENSOR I
I·REAL PULSE I
I·CAST I
I·PB II
I·LMT II
I·REC EN A
I·REC EN B
I·DIREC I
O·SYNC PAUSE
I/O DUB
O·SOL PLAY I
O·SOL FR I
O·MOTOR HI I
REVERSE SENSOR
IC707
SOLENOID DRIVE
Q709, 710
I DECK
MT
CrO
CAST
EN A
EN B
DIREC
VM 11V
PLAY
FR
M
II DECK
REVERSE SENSOR
IC706
SOLENOID DRIVE
Q719, 720
Q717
DATA 7
DATA 0
STRB 2
STRB 0
O·LMT
O·PB II
I·SYNC PAUSE
I/O DUB EN
O·SOL PLAY II
O·SOL FR II
HI SPEED II
IC703
LM6402G-1959
FL DISPLAY
IC801
Q801, 802
VFL -7V
P.T. ~

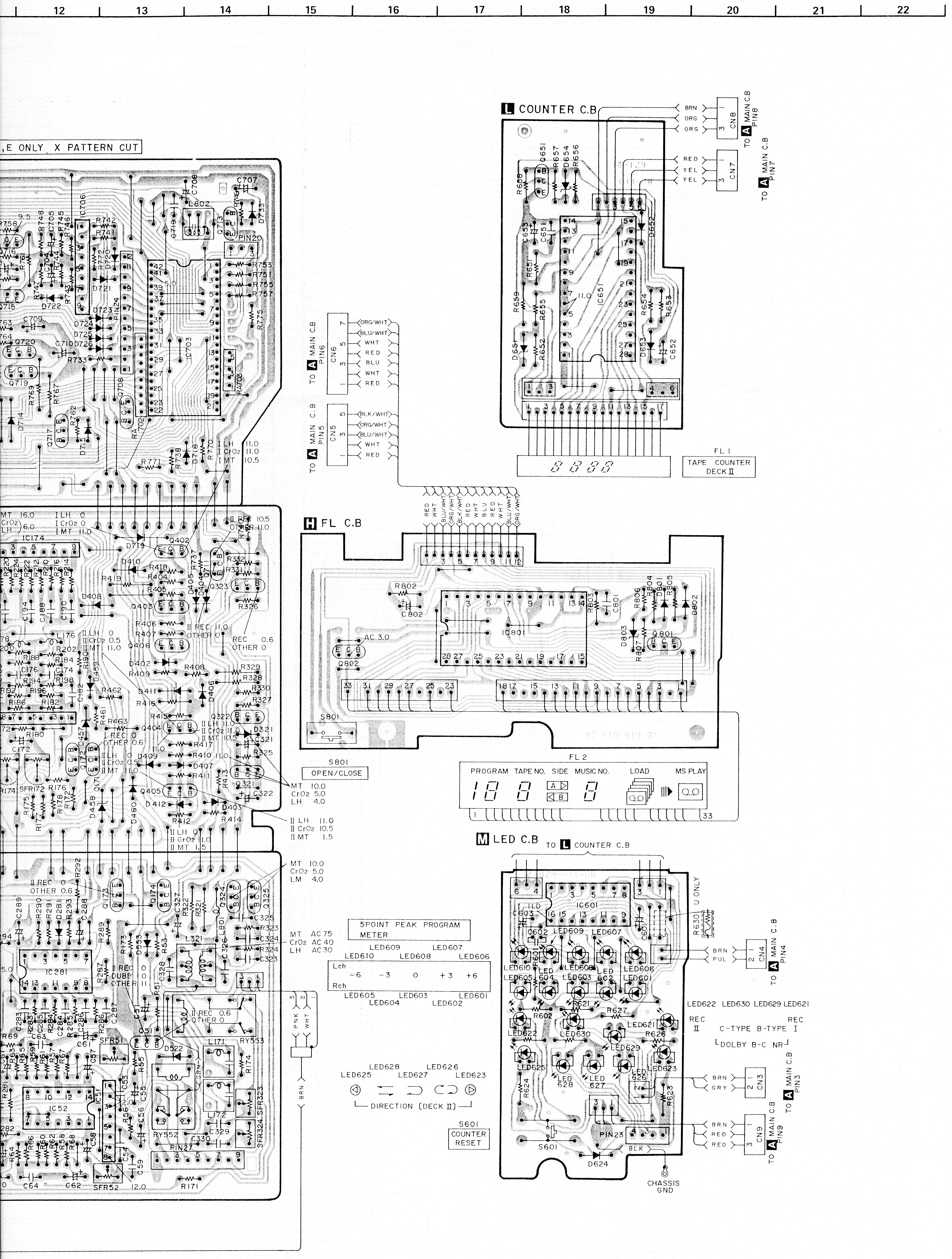
WIRING (AD-A70)



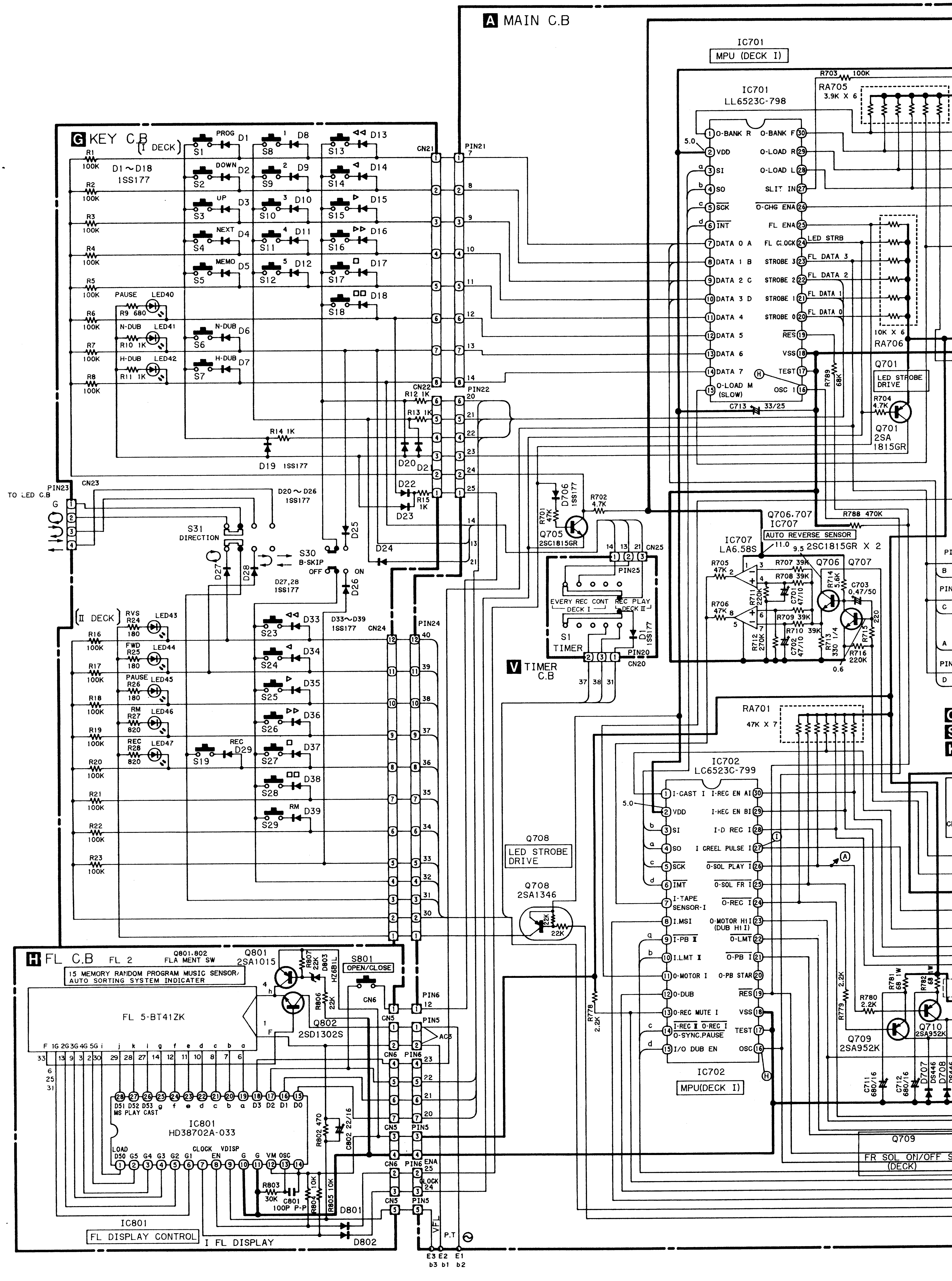
1
2
3
4
5
6
7
8
9
10
11
A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
TO T DECK I C.B PIN28
CN28
TO U DECK II C.B PIN29
CN29
A MAIN C.B
C TR C.B
B DOLBY NR C.B
EXCEPT E
E ONLY
IC705
IC707
IC701
IC702
IC704
IC503
IC501
IC502
IC101
IC241
IC1
IC2
IC3
IC4
IC171
IC173
IC351
RY551
MPX
BPF1
BPF2
I REC 10.5
OTHER 11.0
I LH 11.0
OTHER 10.5
I REC/PLAY 2.0
OTHER 0
PLAY 11.0
OTHER 0
DUBB 0
OTHER 11.0
PLAY 5.5
OTHER 6.0
I PLAY 2.0
OTHER 11.0
HI DUBB 0
OTHER 0.6
J704 RIGHT
J703 LEFT
J702 RIGHT
J701 LEFT
J703,704
J701,702
LINE OUT/PLAY
LINE IN/REC
TO SHIELD
GRN
BLU
BLK
BRN
WHT
RED
PNK
AC 17.0
AC 3.0
PIN5
PIN30
PIN26
SFR1
SFR2
SFR3
SFR4
SFR5
SFR6
SFR53
SFR54
SFR171
SFR173
SFR321
SFR322

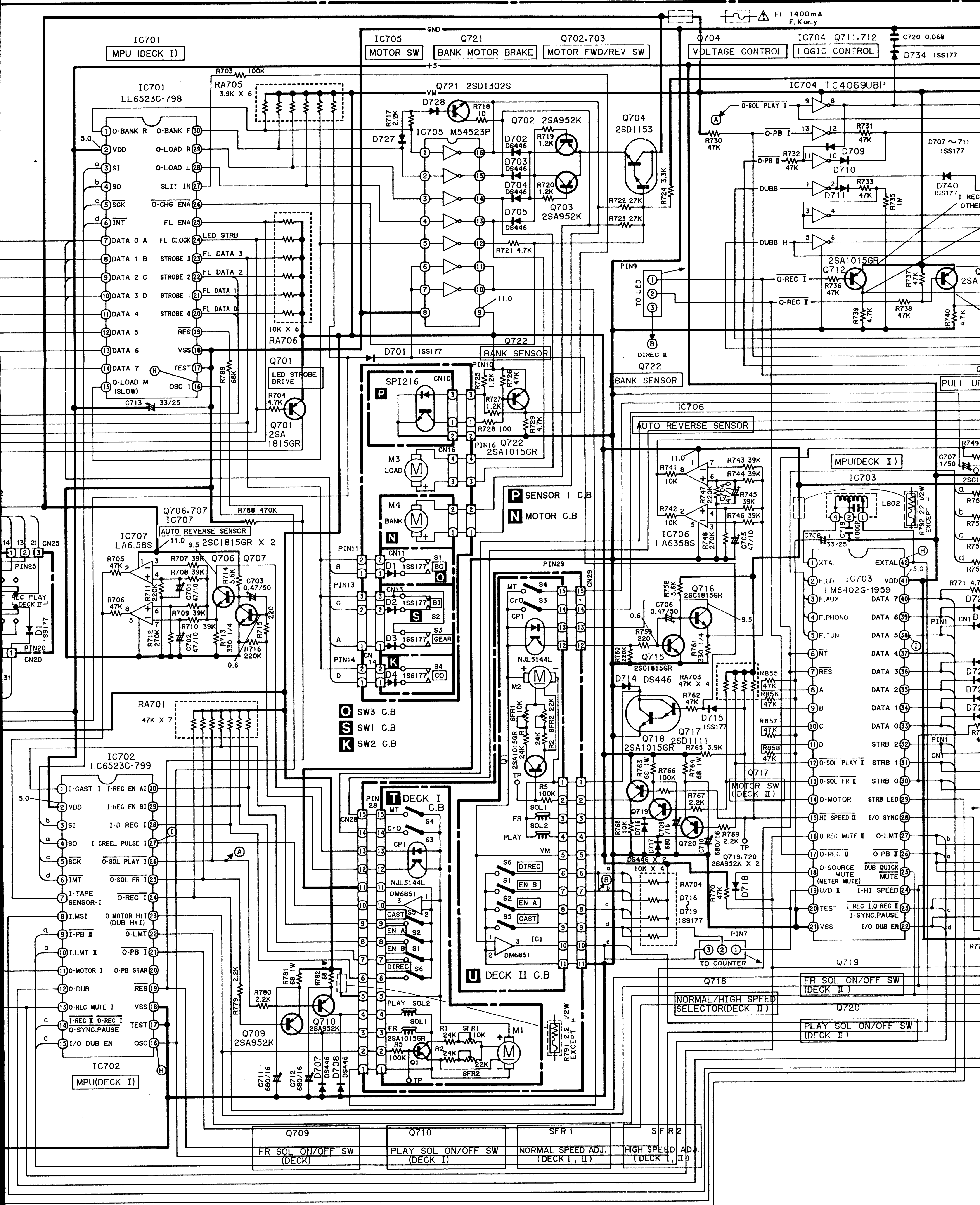
AIWA 444

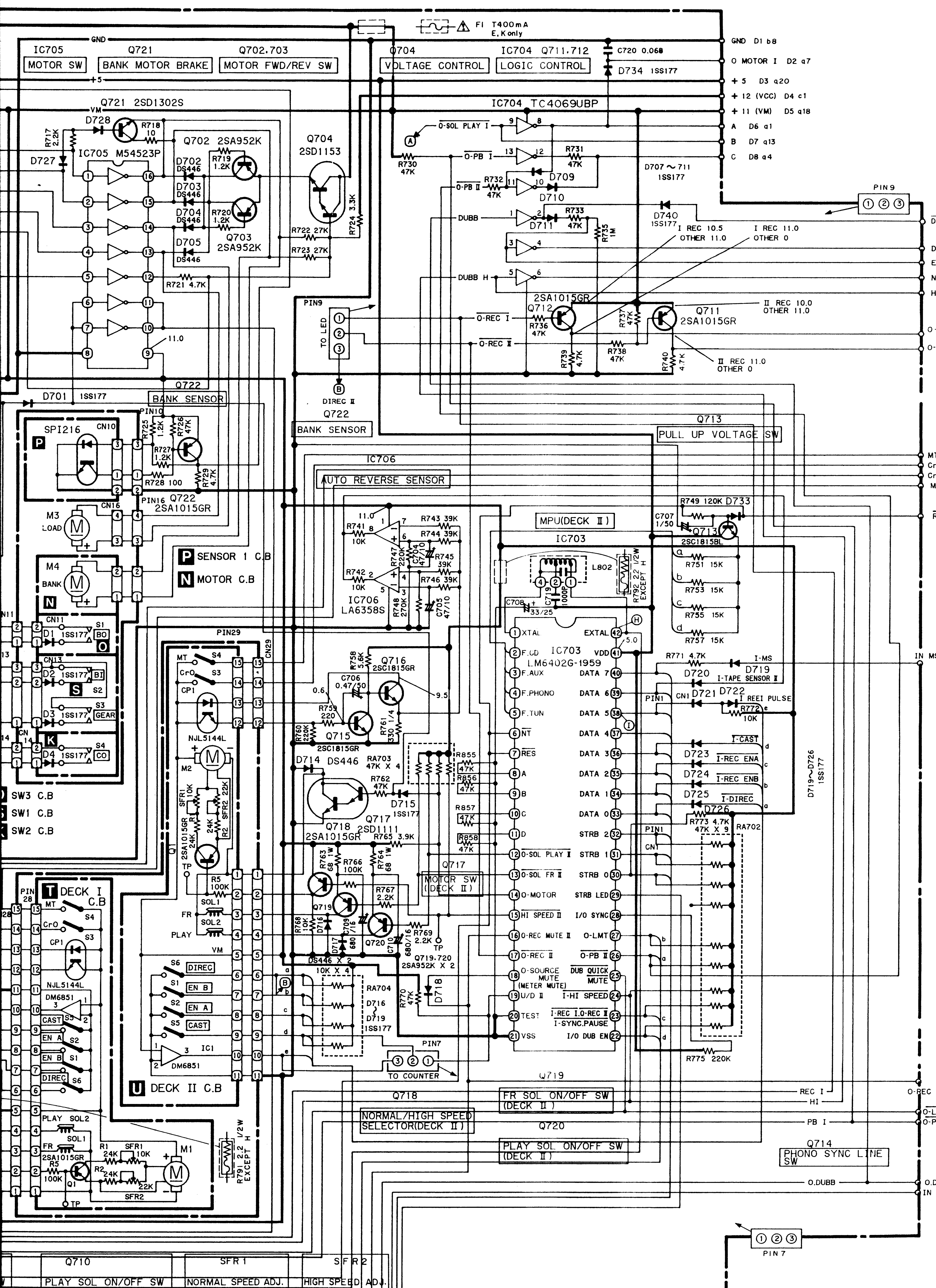

8
9
10
11
12
13
14
15
16
17
18
19
PIN29
※U,E ONLY X PATTERN CUT
L COUNTER C.B
TO A MAIN C.B PIN6 CN6
TO A MAIN C.B PIN5 CN5
ORG/WHT
BLU/WHT
WHT
RED
BLU
BLK/WHT
H FL C.B
B DOLBY NR C.B
IC173
IC174
IC702
IC703
IC704
IC701
IC651
IC801
IC502
IC171
IC172
IC281
IC52
IC601
IC2
IC3
S801
OPEN/CLOSE
FL 2
PROGRAM
TAPE NO.
SIDE
MUSIC NO.
LOAD
M LED C.B
TO L COUNTER C.B
5POINT PEAK PROGRAM METER
Lch
Rch
-6
-3
0
+3
+6
LED610
LED609
LED608
LED607
LED606
LED605
LED604
LED603
LED602
LED601
LED628
LED626
LED625
LED627
LED623
DIRECTION (DECK II)
S601
COUNTER RESET
CHASSIS GND
J704 RIGHT
J703 LEFT
J702 RIGHT
J701 LEFT
TO SHIELD
J703,704
LINE OUT/PLAY
J701,702
LINE IN/REC
MT 10.0
CrO2 5.0
LH 4.0
II LH 11.0
II CrO2 10.5
II MT 1.5
MT 10.0
CrO2 5.0
LM 4.0
MT AC75
CrO2 AC40
LH AC30
I REC/PLAY 2.0
OTHER 0
DUBB 0
OTHER 11.0
PLAY 0
OTHER 0.6
II REC 0
OTHER 0.6
AC 3.0
RY552
RY553
GRN
BLU
BLK
BRN
PNK
WHT


12
13
14
15
16
17
18
19
20
21
22
,E ONLY X PATTERN CUT
L COUNTER C.B
CN8
TO A MAIN C.B PIN8
BRN
ORG
ORG
CN7
TO A MAIN C.B PIN7
RED
YEL
YEL
IC651
Q651
D652
D653
C652
FL 1
TAPE COUNTER DECK II
TO A MAIN C.B PIN6
CN6
ORG/WHT
BLU/WHT
WHT
RED
BLU
WHT
RED
TO A MAIN C.B PIN5
CN5
BLK/WHT
ORG/WHT
BLU/WHT
WHT
RED
H FL C.B
IC801
Q801
Q802
C802
AC 3.0
S801
OPEN/CLOSE
FL 2
PROGRAM
TAPE NO.
SIDE
MUSIC NO.
LOAD
MS PLAY
MT 10.0
CrO2 5.0
LH 4.0
II LH 11.0
II CrO2 10.5
II MT 1.5
MT 10.0
CrO2 5.0
LM 4.0
MT AC 75
CrO2 AC 40
LH AC 30
5POINT PEAK PROGRAM METER
LED609
LED607
LED610
LED608
LED606
Lch
Rch
-6
-3
0
+3
+6
LED605
LED603
LED601
LED604
LED602
LED628
LED626
LED625
LED627
LED623
DIRECTION (DECK II)
S601
COUNTER RESET
M LED C.B
TO L COUNTER C.B
IC601
U ONLY
R630
CN4
TO A MAIN C.B PIN4
BRN
PUL
LED622 LED630 LED629 LED621
REC II
C-TYPE B-TYPE
REC I
DOLBY B-C NR
CN3
TO A MAIN C.B PIN3
BRN
GRY
CN9
TO A MAIN C.B PIN9
BRN
RED
RED
PIN23
BLK
D624
CHASSIS GND
IC703
IC174
IC281
IC52
IC51
RY552
RY553
PIN24
PIN20
PIN27
SFR172
SFR51
SFR52
SFR323
SFR324
II REC 0
OTHER 0.6
II REC 0.6
OTHER 0
REC 0.6
OTHER 0
I REC 0
OTHER 0.6
PNK
WHT
BRN

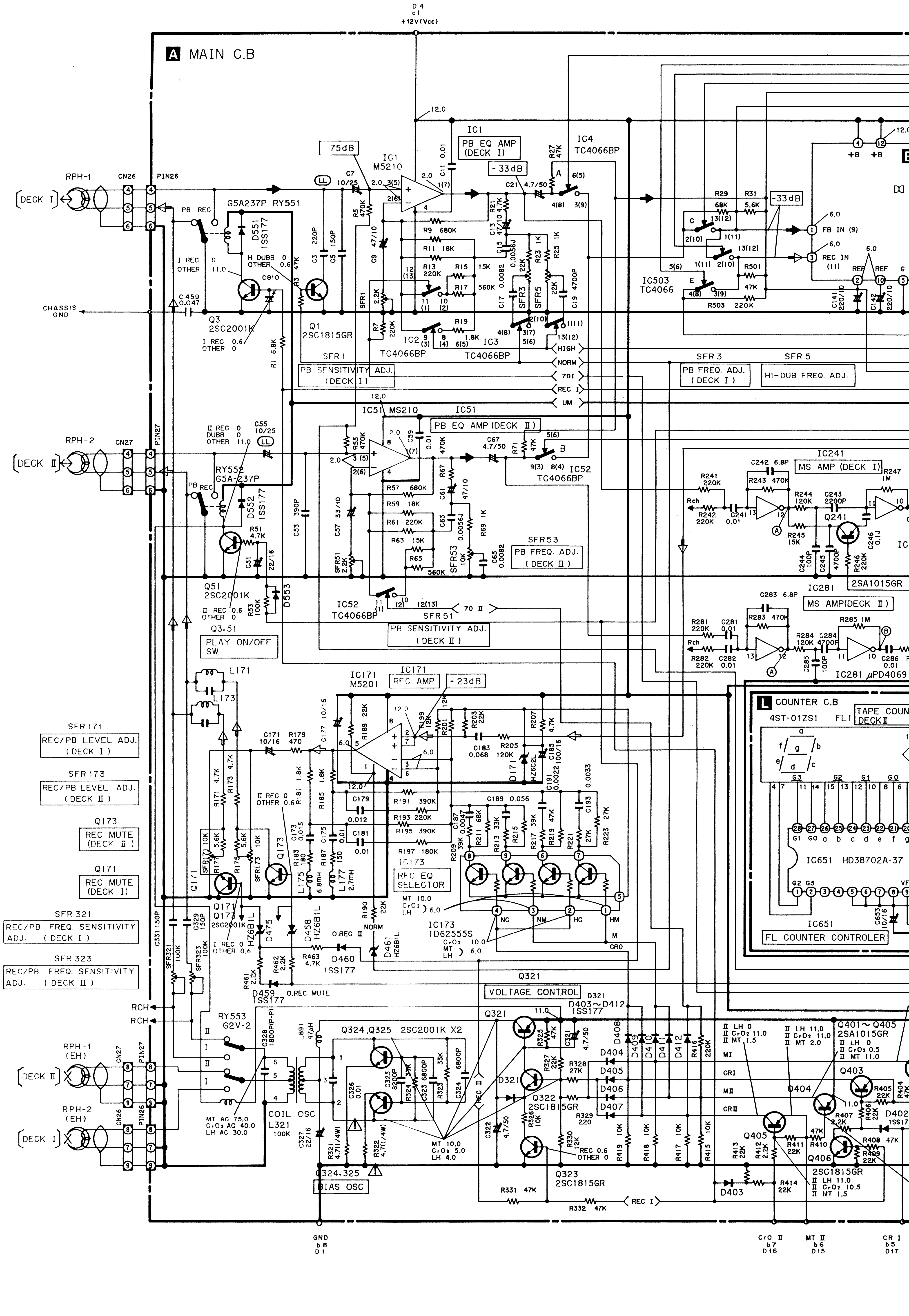
SCHEMATIC DIAGRAM (AD-A70)

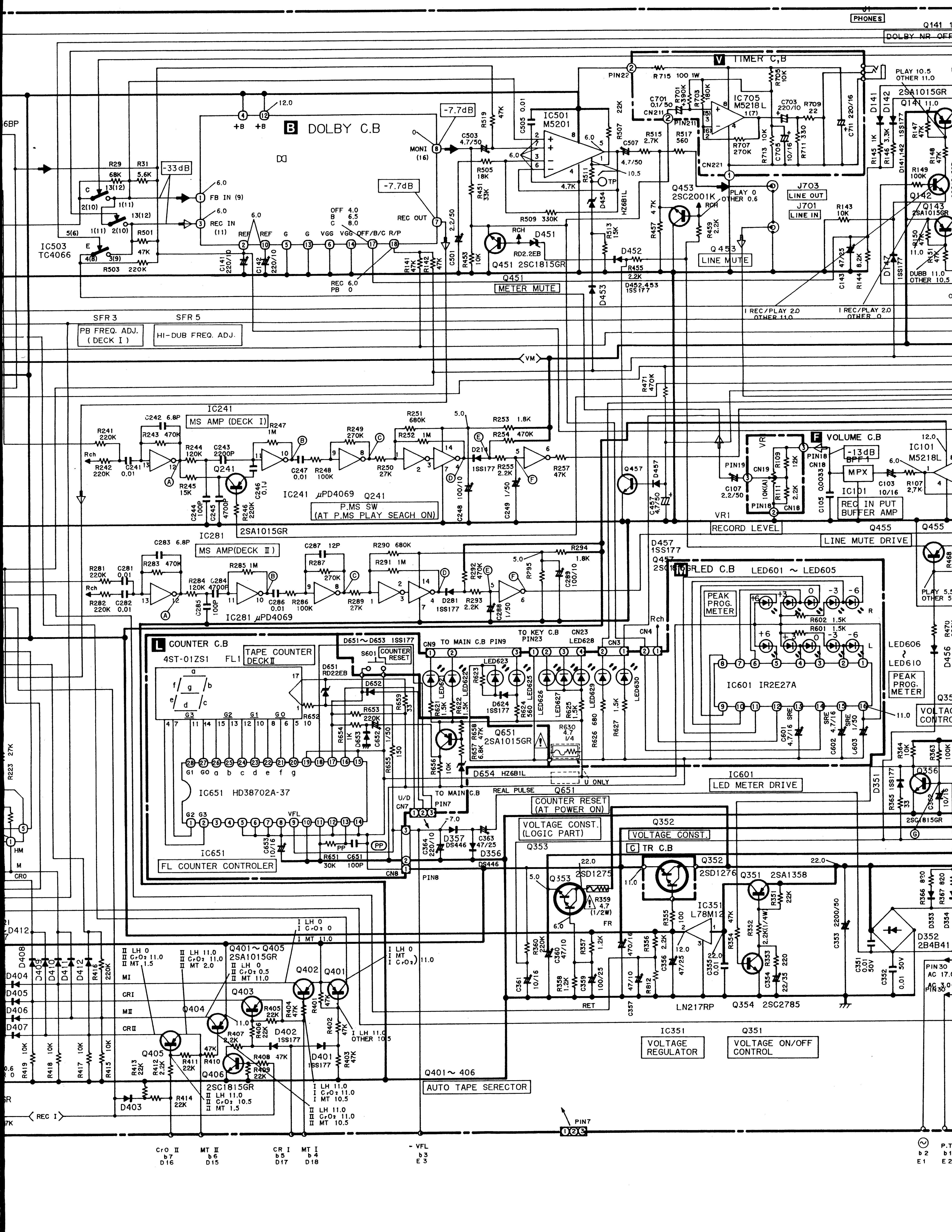

A MAIN C.B
IC701
MPU (DECK I)
IC701 LL6523C-798
O-BANK R
VDD
SI
SO
SCK
INT
DATA 0 A
DATA 1 B
DATA 2 C
DATA 3 D
DATA 4
DATA 5
DATA 6
DATA 7
O-LOAD M (SLOW)
O-BANK F
O-LOAD R
O-LOAD L
SLIT IN
O-CHG ENA
FL ENA
FL CLOCK
STROBE 3
STROBE 2
STROBE 1
STROBE 0
RES
VSS
TEST
OSC 1
LED STRB
FL DATA 3
FL DATA 2
FL DATA 1
FL DATA 0
R703 100K
RA705 3.9K X 6
10K X 6 RA706
Q701 LED STROBE DRIVE
Q701 2SA 1815GR
C713 33/25
R789 68K
R788 470K
G KEY C.B (I DECK)
D1~D18 1SS177
PROG
DOWN
UP
NEXT
MEMO
PAUSE
N-DUB
H-DUB
LED40
LED41
LED42
R9 680
R10 1K
R11 1K
R1 100K
R2 100K
R3 100K
R4 100K
R5 100K
R6 100K
R7 100K
R8 100K
CN21
PIN21
CN22
PIN22
R12 1K
R13 1K
R14 1K
R15 1K
D19 1SS177
D20
D21
D22
D23
D20~D26 1SS177
TO LED C.B
CN23
PIN23
S31 DIRECTION
S30 B-SKIP OFF ON
D27,28 1SS177
D24
D25
D26
(II DECK)
RVS R24 180 LED43
FWD R25 180 LED44
PAUSE R26 180 LED45
RM R27 820 LED46
REC R28 820 LED47
R16 100K
R17 100K
R18 100K
R19 100K
R20 100K
R21 100K
R22 100K
R23 100K
S19 REC D29
D33~D39 1SS177
CN24
PIN24
Q705 2SC1815GR
D706 1SS177
R701 47K
R702 4.7K
CN25
PIN25
EVERY REC CONT DECK I
REC PLAY DECK II
S1 TIMER
D1 1SS177
PIN20
CN20
V TIMER C.B
Q706.707
IC707
AUTO REVERSE SENSOR
IC707 LA6.58S
2SC1815GR X 2
Q706
Q707
R705 47K
R706 47K
R707 39K
R708 39K
R709 39K
R710 39K
R711 220K
R712 270K
R713 330 1/4
R714 5.6K
R715 220
R716 220K
C701 47/10
C702 47/10
C703 0.47/50
RA701 47K X 7
IC702 LC6523C-799
I-CAST I
VDD
SI
SO
SCK
IMT
I-TAPE SENSOR-I
I.MSI
I-PB II
I.LMT II
O-MOTOR I
O-DUB
O-REC MUTE I
I-REC II O-REC I
O-SYNC.PAUSE
I/O DUB EN
I-REC EN AI
I-REC EN BI
I-D REC I
I CREEL PULSE I
O-SOL PLAY I
O-SOL FR I
O-REC I
O-MOTOR HI I (DUB HI I)
O-LMT
O-PB I
O-PB STAR
RES
VSS
TEST
OSC
IC702 MPU(DECK I)
Q708 LED STROBE DRIVE
Q708 2SA1346
R778 2.2K
R779 2.2K
R780 2.2K
R781 68 1W
R782 68 1W
Q709 2SA952K
Q710 2SA952K
C711 680/16
C712 680/16
D707
D708
Q709 FR SOL ON/OFF (DECK)
H FL C.B
FL 2
Q801.802 FLA MENT SW
Q801 2SA1015
15 MEMORY RANDOM PROGRAM MUSIC SENSOR/ AUTO SORTING SYSTEM INDICATER
FL 5-BT41ZK
Q802 2SD1302S
R806 22K
R807 22K
D803 HZ6B1L
S801 OPEN/CLOSE
CN6
PIN6
CN5
PIN5
AC3
IC801 HD38702A-033
D51 D52 D53 MS PLAY CAST
LOAD D50 G5 G4 G3 G2 G1
CLOCK EN
VDISP G G VM OSC
R802 470
C802 22/16
R803 30K
C801 100P P-P
R804 10K
R805 10K
D801
D802
IC801 FL DISPLAY CONTROL
I FL DISPLAY
VFL
P.T
ENA
CLOCK
E3 E2 E1
b3 b1 b2

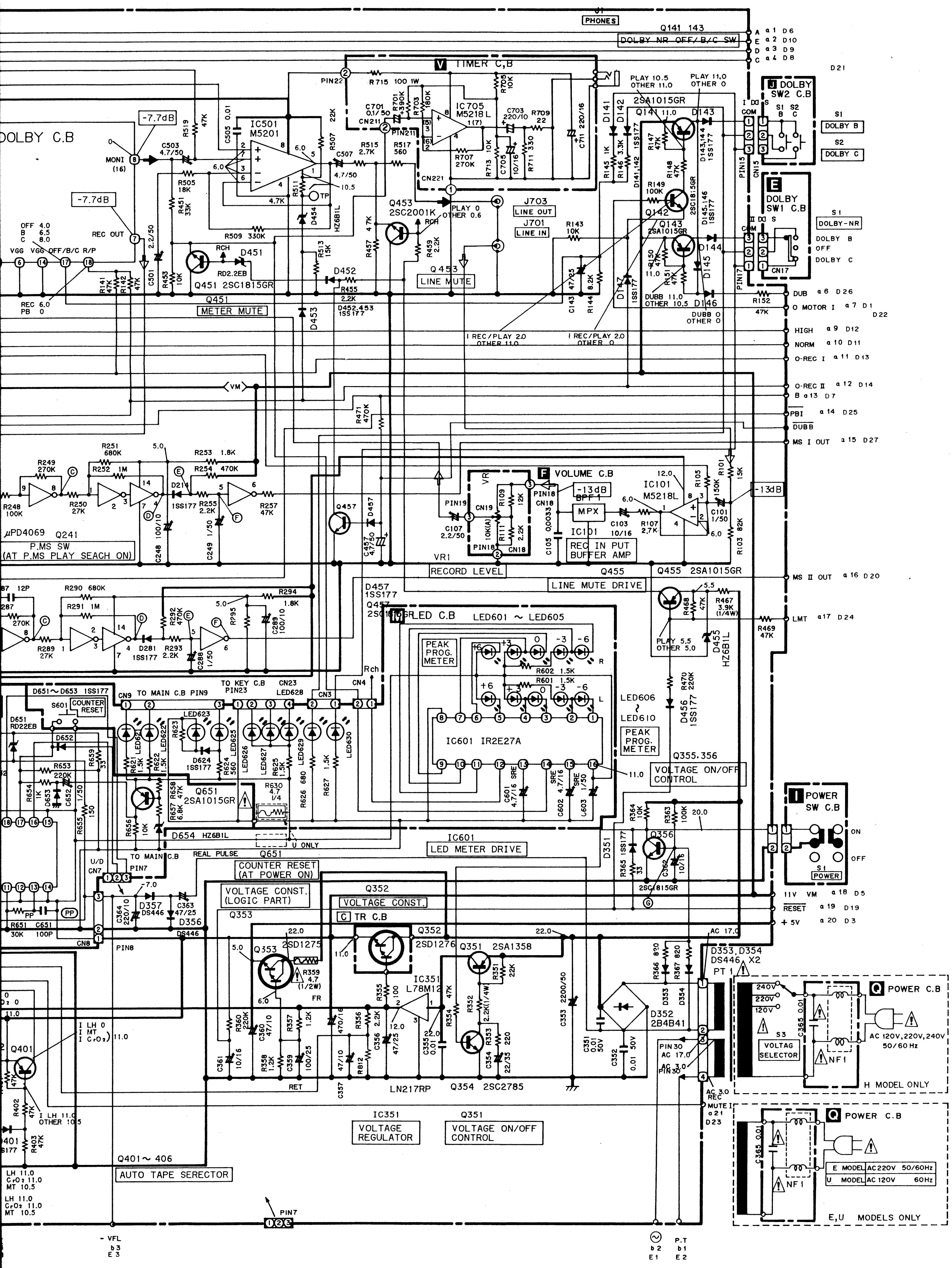

IC701 MPU (DECK I)
IC701 LL6523C-798
IC705 MOTOR SW
Q721 BANK MOTOR BRAKE
Q702.703 MOTOR FWD/REV SW
Q704 VOLTAGE CONTROL
IC704 Q711.712 LOGIC CONTROL
F1 T400mA E.K only
C720 0.068
D734 1SS177
GND
+5
VM
R703 100K
RA705 3.9K X 6
Q721 2SD1302S
D728
R718 10
R717 2.2K
D727
IC705 M54523P
Q702 2SA952K
R719 1.2K
D702 DS446
D703 DS446
D704 DS446
D705 DS446
R720 1.2K
Q703 2SA952K
Q704 2SD1153
R724 3.3K
R722 27K
R723 27K
R721 4.7K
IC704 TC4069UBP
O-SOL PLAY I
O-PB I
O-PB II
R730 47K
R731 47K
R732 47K
D709
D710
D707 ~ 711 1SS177
DUBB
D711
R733 47K
R735 1M
D740 1SS177
DUBB H
2SA1015GR
Q712
O-REC I
O-REC II
R736 47K
R737 47K
R738 47K
R739 4.7K
R740 4.7K
PIN9
TO LED
DIREC II
Q722 BANK SENSOR
PULL UP
O-BANK R
O-BANK F
VDD
SI
SO
SCK
INT
DATA 0 A
DATA 1 B
DATA 2 C
DATA 3 D
DATA 4
DATA 5
DATA 6
DATA 7
O-LOAD M (SLOW)
O-LOAD R
O-LOAD L
SLIT IN
O-CHG ENA
FL ENA
FL CLOCK
STROBE 3
STROBE 2
STROBE 1
STROBE 0
RES
VSS
TEST
OSC 1
LED STRB
FL DATA 3
FL DATA 2
FL DATA 1
FL DATA 0
10K X 6 RA706
R789 68K
C713 33/25
Q701 LED STROBE DRIVE
R704 4.7K
Q701 2SA 1815GR
D701 1SS177
SPI216
CN10
P
PIN10
R725 1.2K
R726 47K
R727 1.2K
R728 100
R729 4.7K
PIN16 Q722 2SA1015GR
CN16
M3 LOAD
M4 BANK
N
P SENSOR 1 C.B
N MOTOR C.B
IC706 AUTO REVERSE SENSOR
R741 10K
R742 10K
R743 39K
R744 39K
R745 39K
R746 39K
R747 220K
R748 270K
C704 47/10
C705 47/10
IC706 LA6358S
MPU(DECK II)
IC703
L802
C719 1000P
C708 33/25
R792 22 1/2W EXCEPT H
Q706.707 IC707 AUTO REVERSE SENSOR
R788 470K
IC707 LA6358S
2SC1815GR X 2
R705 47K
R706 47K
R707 39K
R708 39K
R709 39K
R710 39K
Q706 Q707
R711 220K
R712 270K
C701 47/10
C702 47/10
R714 5.6K
C703 0.47/50
R713 330 1/4
R715 220
R716 220K
CN25
PIN25
REC PLAY DECK II
D1 1SS177
PIN20 CN20
PIN11
PIN13
PIN14
CN11
CN13
CN14
S1 BO
O
D1 1SS177
D2 1SS177 BI
S S2
D3 1SS177 S3 GEAR
D4 1SS177 S4 CO
K
O SW3 C.B
S SW1 C.B
K SW2 C.B
RA701 47K X 7
IC702 LC6523C-799
I-CAST I
I-REC EN AI
I-REC EN BI
I-D REC I
I CREEL PULSE I
O-SOL PLAY I
O-SOL FR I
O-REC I
I-TAPE SENSOR-I
I.MSI
O-MOTOR HI I (DUB HI I)
O-LMT
I-PB II
I.LMT II
O-PB I
O-MOTOR I
O-PB STAR
O-DUB
O-REC MUTE I
I-REC II O-REC I O-SYNC.PAUSE
I/O DUB EN
IC702 MPU(DECK I)
PIN29
CN29
MT S4
CrO S3
CP1
NJL5144L
M2
SFR1 10K
SFR2 22K
24K R1
24K R2
Q1 2SA1015GR
TP
R5 100K
SOL1
FR
SOL2
PLAY
S6 DIREC
S1 EN B
S2 EN A
S5 CAST
IC1 DM6851
U DECK II C.B
Q716 2SC1815GR
R758 5.6K
C706 0.47/50
R759 220
R760 220K
Q715 2SC1815GR
R761 330 1/4
D714 DS446
RA703 47K X 4
R762 47K
D715 1SS177
Q717 2SD1111
Q718 2SA1015GR
R765 3.9K
R763 68 1W
R766 100K
R764 68 1W
R767 2.2K
Q719
Q720
R768 10K
D716
D717
C709 680/16
C710 680/16
R769 2.2K
TP
Q719.720 2SA952K X 2
DS446 X 2
10K X 4
RA704
D716 ~ D719 1SS177
R770 47K
D718
Q717 MOTOR SW (DECK II)
R855 47K
R856 47K
R857 47K
R858 47K
PIN7
TO COUNTER
XTAL
EXTAL
F.CD
IC703 LM6402G-1959
F.AUX
F.PHONO
F.TUN
NT
RES
A
B
C
D
O-SOL PLAY II
O-SOL FR II
O-MOTOR
HI SPEED II
O-REC MUTE II
O-REC II
O-SOURCE MUTE (METER MUTE)
U/D II
TEST
VSS
DATA 7
DATA 6
DATA 5
DATA 4
DATA 3
DATA 2
DATA 1
DATA 0
STRB 2
STRB 1
STRB 0
STRB LED
I/O SYNC
O-LMT
O-PB II
DUB QUICK MUTE
I-HI SPEED
I-REC I.O-REC II I-SYNC.PAUSE
I/O DUB EN
R771 4.7
PIN1 CN1
R749
C707 1/50
Q719 FR SOL ON/OFF SW (DECK II)
Q718 NORMAL/HIGH SPEED SELECTOR(DECK II)
Q720 PLAY SOL ON/OFF SW (DECK II)
PIN 28
CN28
T DECK I C.B
MT S4
CrO S3
CP1
NJL5144L
DM6851
CAST S5
EN A S2
EN B S1
DIREC S6
PLAY SOL2
FR SOL1
2SA1015GR
R5 100K
Q1
R1 24K
SFR1 10K
R2 24K
22K
SFR2
M1
TP
R791 2.2 1/2W EXCEPT H
R781 68 1W
R782 68 1W
R780 2.2K
R779 2.2K
Q709 2SA952K
Q710 2SA952K
C711 680/16
C712 680/16
D707 DS446
D708 DS446
Q709 FR SOL ON/OFF SW (DECK)
Q710 PLAY SOL ON/OFF SW (DECK I)
SFR1 NORMAL SPEED ADJ. (DECK I, II)
SFR2 HIGH SPEED ADJ. (DECK I, II)


F1 T400mA E,K only
GND
IC705 MOTOR SW
Q721 BANK MOTOR BRAKE
Q702.703 MOTOR FWD/REV SW
Q704 VOLTAGE CONTROL
IC704 Q711.712 LOGIC CONTROL
C720 0.068
D734 1SS177
GND D1 b8
O MOTOR I D2 a7
+5 D3 a20
+12 (VCC) D4 c1
+11 (VM) D5 a18
A D6 a1
B D7 a13
C D8 a4
Q721 2SD1302S
VM
IC704 TC4069UBP
D728
R718 10
R717 2.2K
Q702 2SA952K
Q704 2SD1153
O-SOL PLAY I
D727
IC705 M54523P
D702 DS446
R719 1.2K
D703 DS446
D704 DS446
R720 1.2K
Q703 2SA952K
D705 DS446
R721 4.7K
R722 27K
R723 27K
R724 3.3K
R730 47K
O-PB I
R731 47K
O-PB II
R732 47K
D709
D710
D707～711 1SS177
DUBB
D711
R733 47K
R735 1M
D740 1SS177
I REC 10.5 OTHER 11.0
I REC 11.0 OTHER 0
DUBB H
PIN9
DUBB
D D9 a3
E D10 a2
NOR D11 a10
HIGH D12 a9
2SA1015GR
Q712
O-REC I
R736 47K
R737 47K
Q711 2SA1015GR
II REC 10.0 OTHER 11.0
O-REC II
R739 4.7K
R738 47K
R740 4.7K
II REC 11.0 OTHER 0
O-REC I D13 a11
O-REC II D14 a12
PIN9 TO LED
DIREC II
11.0
D701 1SS177
Q722 BANK SENSOR
Q722 BANK SENSOR
SPI216 CN10
PIN10
R725 1.2K
R726 47K
R727 1.2K
R728 100
R729 4.7K
PIN16 Q722 2SA1015GR
M3 LOAD
CN16
M4 BANK
P SENSOR 1 C.B
N MOTOR C.B
IC706 AUTO REVERSE SENSOR
R741 10K
R742 10K
R743 39K
R744 39K
R745 39K
R746 39K
R747 220K
R748 270K
C704 47/10
C705 47/10
IC706 LA6358S
Q713 PULL UP VOLTAGE SW
MT II D15 b6
CrO II D16 b7
CrO I D17 b5
MT I D18 b4
R749 120K D733
C707 1/50
Q713 2SC1815BL
RESET D19 a19
MPU(DECK II)
IC703
L802
R792 2.2 1/2W EXCEPT H
R751 15K
R753 15K
R755 15K
R757 15K
C708 33/25
C719 1000P
IC703 LM6402G-1959
XTAL EXTAL VDD
F.CD F.AUX F.PHONO F.TUN
NT RES A B C D
O-SOL PLAY II
O-SOL FR II
O-MOTOR
HI SPEED II
O-REC MUTE II
O-REC II
O-SOURCE MUTE (METER MUTE)
U/D II
TEST
VSS
DATA 7 DATA 6 DATA 5 DATA 4 DATA 3 DATA 2 DATA 1 DATA 0
STRB 2 STRB 1 STRB 0
STRB LED
I/O SYNC
O-LMT
O-PB II
DUB QUICK MUTE
I-HI SPEED
I-REC I.O-REC II I-SYNC.PAUSE
I/O DUB EN
R771 4.7K
D720 D719 I-MS I-TAPE SENSOR II
D721 D722 I REEL PULSE
R772 10K
I-CAST
D723 I-REC ENA
D724 I-REC ENB
D725 I-DIREC
D726
D719～D726 1SS177
R773 4.7K
47K X 9 RA702
R775 220K
IN MS II D20 a16
SW3 C.B
SW1 C.B
SW2 C.B
CN11 D1 1SS177 BO S1
CN13 D2 1SS177 BI S2
D3 1SS177 GEAR S3
D4 1SS177 CO S4
PIN29 CN29
MT S4
CrO S3
CP1
NJL5144L
M2
SFR1 10K
SFR2 22K
24K
Q1 2SA1015GR
TP
R5 100K
SOL1 FR
SOL2 PLAY
VM
S6 DIREC
S1 EN B
S2 EN A
S5 CAST
IC1 DM6851
U DECK II C.B
R758 5.6K
Q716 2SC1815GR
C706 0.47/50
R759 220
Q715
R761 1/4 330
R760 220K
2SC1815GR
D714 DS446
RA703 47K X 4
R855 47K
R856 47K
R857 47K
R858 47K
R762 47K
D715 1SS177
Q718 2SA1015GR
Q717 2SD1111
R765 3.9K
R763 68 1W
R766 100K
R764 68 1W
Q717 MOTOR SW (DECK II)
R767 2.2K
Q719
Q720
R768 10K
D716
C709 680/16
C710 680/16
D717
R769 2.2K
Q719.720 2SA952K X 2
DS446 X 2
10K X 4
RA704
D716～D719 1SS177
R770 47K
D718
PIN7 TO COUNTER
T DECK I C.B
PIN28
MT S4
CrO S3
CP1
NJL5144L
DM6851
CAST S5
EN A S2
EN B S1
DIREC S6
PLAY SOL2
SOL1 FR
2SA1015GR R5 100K
Q1 TP
R1 24K SFR1 10K
R2 24K 22K SFR2
M1
R791 2.2 1/2W EXCEPT H
Q719 FR SOL ON/OFF SW (DECK II)
Q718 NORMAL/HIGH SPEED SELECTOR(DECK II)
Q720 PLAY SOL ON/OFF SW (DECK II)
REC I
HI
PB I
O.DUBB
D23 a21 O-REC MUTE
D24 a17 O-LMT
O-PB I D25 a14
Q714 PHONO SYNC LINE SW
D26 a6 O.DUBB
IN MS I D27 a15
PIN7
Q710 PLAY SOL ON/OFF SW (DECK I)
SFR1 NORMAL SPEED ADJ. (DECK I, II)
SFR2 HIGH SPEED ADJ. (DECK I, II)

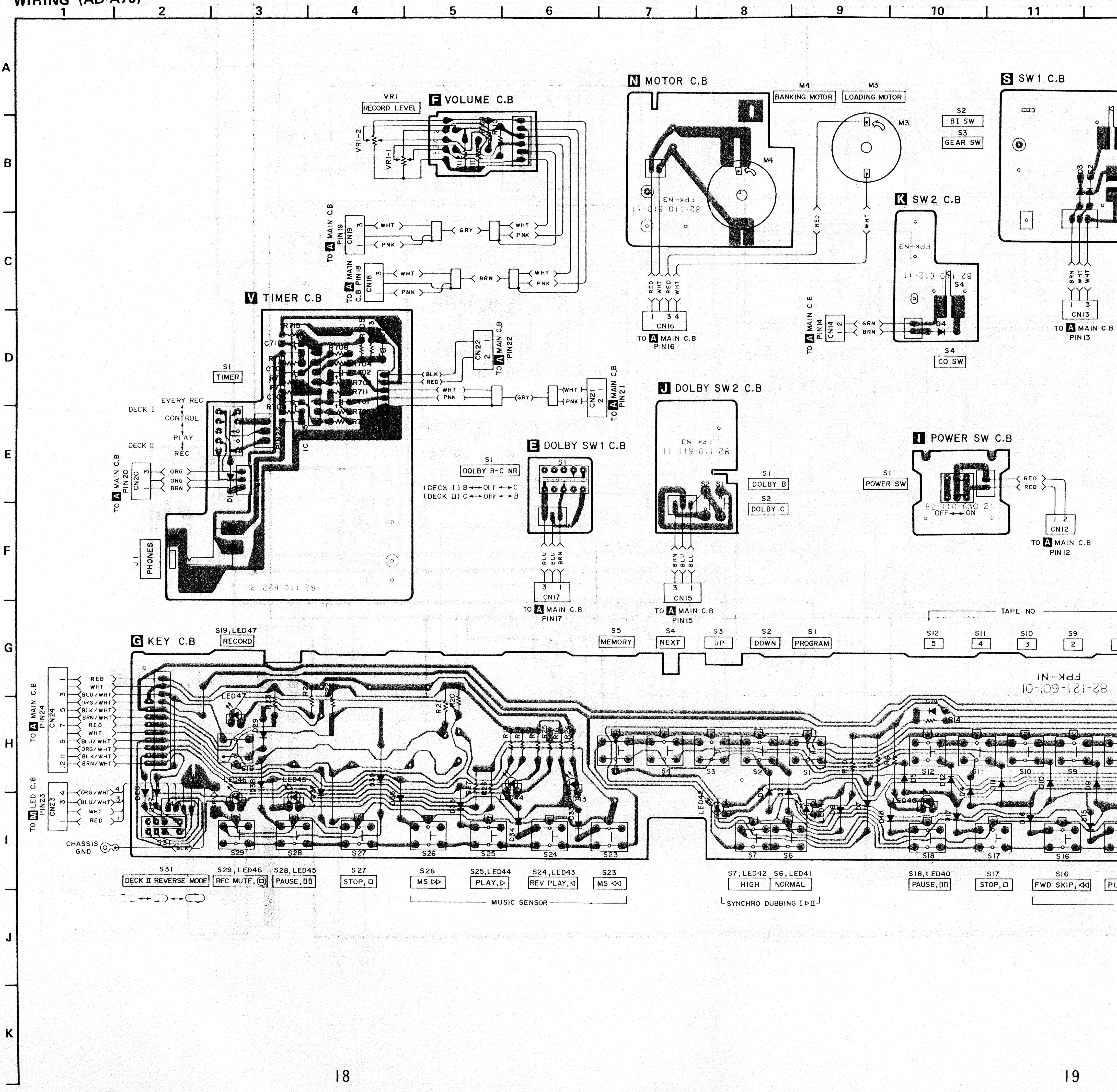
SCHEMATIC DIAGRAM (AD-A70)


D4
c1
+12V(Vcc)
A MAIN C.B
RPH-1
CN26
PIN26
DECK I
PB REC
G5A237P RY551
D551 1SS177
I REC 0
OTHER 11.0
H DUBB 0
OTHER 0.6
C810
C459 0.047
CHASSIS GND
Q3 2SC2001K
I REC 0.6
OTHER 0
Q1 2SC1815GR
-75dB
IC1 M5210
C7 10/25
LL
IC1
PB EQ AMP (DECK I)
-33dB
IC4 TC4066BP
R9 680K
R11 18K
R13 220K
R15 15K
R17 560K
R19 1.8K
IC2 IC3
TC4066BP
SFR1
PB SENSITIVITY ADJ. (DECK I)
SFR3
PB FREQ. ADJ. (DECK I)
SFR5
HI-DUB FREQ. ADJ.
HIGH
NORM
70I
REC I
UM
R29 68K
R31 5.6K
-33dB
FB IN (9)
REC IN (11)
IC503 TC4066
R501 47K
R503 220K
+B +B
12.0
RPH-2
CN27
PIN27
DECK II
RY552 G5A-237P
D552 1SS177
II REC 0
DUBB 0
OTHER 11.0
C55 10/25
R51 4.7K
Q51 2SC2001K
II REC 0.6
OTHER 0
Q3,51
PLAY ON/OFF SW
D553
IC51 MS210
IC51
PB EQ AMP (DECK II)
C67 4.7/50
IC52 TC4066BP
R57 680K
R59 18K
R61 220K
R63 15K
R65 560K
SFR53
PB FREQ. ADJ. (DECK II)
SFR51
PB SENSITIVITY ADJ. (DECK II)
70 II
IC241
MS AMP (DECK I)
R241 220K
R242 220K
R243 470K
R244 120K
R245 15K
R247 1M
Q241
2SA1015GR
IC281
MS AMP(DECK II)
R281 220K
R282 220K
R283 470K
R284 120K
R285 1M
IC281 μPD4069
Rch
L171
L173
SFR171
REC/PB LEVEL ADJ. (DECK I)
SFR173
REC/PB LEVEL ADJ. (DECK II)
Q173
REC MUTE (DECK II)
Q171
REC MUTE (DECK I)
SFR321
REC/PB FREQ. SENSITIVITY ADJ. (DECK I)
SFR323
REC/PB FREQ. SENSITIVITY ADJ. (DECK II)
IC171 M5201
IC171
REC AMP
-23dB
C171 10/16
R179 470
II REC 0
OTHER 0.6
Q171 Q173 2SC2001K
I REC 0
OTHER 0.6
D475
D458 HZ6B1L
D460 1SS177
D461 HZ6B1L
D459 1SS177
O.REC II
O.REC MUTE
NORM
IC173
REC EQ SELECTOR
IC173 TD62555S
MT 10.0
CrO2 10.0
LH 6.0
NC NM HC HM
M
CRO
L175 6.8mH
L177 2.7mH
D171 HZ6C2L
Q321
VOLTAGE CONTROL
D321
D403~D412 1SS177
Q322 2SC1815GR
Q323 2SC1815GR
REC 0.6
OTHER 0
R331 47K
R332 47K
REC I
RCH
RCH
RY553 G2V-2
RPH-1 (EH)
RPH-2 (EH)
MT AC 75.0
CrO2 AC 40.0
LH AC 30.0
COIL OSC L321
Q324,Q325 2SC2001K X2
MT 10.0
CrO2 5.0
LH 4.0
Q324,325
BIAS OSC
II LH 0
II CrO2 11.0
II MT 1.5
MI
CRI
MII
CRII
I LH 11.0
II CrO2 11.0
II MT 2.0
Q401~Q405 2SA1015GR
Q403
Q404
Q405
Q406
2SC1815GR
II LH 11.0
II CrO2 10.5
II MT 1.5
D402 1SS177
D403
L COUNTER C.B
4ST-01ZS1
FL1
TAPE COUN
DECK II
IC651 HD38702A-37
IC651
FL COUNTER CONTROLER
GND b8 D1
CrO II b7 D16
MT II b6 D15
CR I b5 D17


PHONES
Q141
DOLBY NR OFF
V TIMER C.B
PIN22
R715 100 1W
R705 10K
C701 0.1/50
R701 390K
R703 180K
IC705 M5218L
C703 220/10
R709 22
C711 220/16
CN211
PIN211
R707 270K
R713 10K
C705 10/16
R711 330
CN221
PLAY 0
OTHER 0.6
PLAY 10.5
OTHER 11.0
2SA1015GR
D141
D142
1SS177
R145 1K
R146 3.3K
R147 47K
R148 47K
R149 100K
D141,142
Q142
Q143
2SA1015GR
R143 10K
C143 47/25
R144 8.2K
D143
R150 47K
R151 47K
DUBB 11.0
OTHER 10.5
I REC/PLAY 2.0
OTHER 11.0
I REC/PLAY 2.0
OTHER 0
6BP
B DOLBY C.B
+B
+B
12.0
-7.7dB
-33dB
-7.7dB
R519 47K
C505 0.01
IC501 M5201
R507 22K
C503 4.7/50
MONI (16)
R505 18K
R451 33K
C507 4.7/50
R515 2.7K
R517 560
6.0
10.5
4.7K
R511
TP
D454 HZ6B1L
4.7K
Q453 2SC2001K
RCH
R459 2.2K
J703 LINE OUT
J701 LINE IN
R29 68K
R31 5.6K
FB IN (9)
REC IN (11)
REF
REF
G
G
VGG
VGG OFF/B/C R/P
OFF 4.0
B 6.5
C 8.0
REC OUT
R501 47K
R503 220K
IC503 TC4066
C141 220/10
C142 220/10
R141 47K
R142 47K
C501 2.2/50
R453 10K
R509 330K
Q451 2SC1815GR
D451 RD2.2EB
R513 15K
D452
R455 2.2K
D452,453 1SS177
D453
R457 4.7K
Q453 LINE MUTE
REC 6.0
PB 0
Q451 METER MUTE
SFR3
SFR5
PB FREQ. ADJ. (DECK I)
HI-DUB FREQ. ADJ.
VM
R471 470K
IC241
C242 6.8P
MS AMP (DECK I)
R241 220K
R243 470K
R247 1M
R242 220K
C241 0.01
R244 120K
C243 2200P
Q241
R245 15K
C244 100P
C245 4700P
R246 220K
C246 0.1J
2SA1015GR
C247 0.01
R248 100K
R249 270K
R250 27K
R251 680K
R252 1M
R253 1.8K
R254 470K
D214 1SS177
R255 2.2K
R257 47K
C248 100/10
C249 1/50
IC241 µPD4069
Q241
P.MS SW (AT P.MS PLAY SEACH ON)
Q457
D457
C457 4.7/50
F VOLUME C.B
VR
PIN19
C107 2.2/50
CN19
R109 12K
10K(A)
R111 2.2K
PIN18
CN18
-13dB
BPF 1
MPX
IC101 M5218L
12.0
6.0
C103 10/16
R107 2.7K
C105 0.0033
IC101 REC IN PUT BUFFER AMP
VR1 RECORD LEVEL
Q455 LINE MUTE DRIVE
Q455
IC281
C283 6.8P
MS AMP(DECK II)
R281 220K
C281 0.01
R283 470K
R285 1M
R282 220K
C282 0.01
R284 120K
C284 4700P
C285 100P
C286 0.01
R286 100K
C287 12P
R287 270K
R289 27K
R290 680K
R291 1M
D281 1SS177
R292 470K
R293 2.2K
R294 1.8K
R295
C288 1/50
C289 100/10
IC281 µPD4069
D457 1SS177
Q457 2SC1815GR
M LED C.B
LED601 ~ LED605
PEAK PROG. METER
R602 1.5K
R601 1.5K
IC601 IR2E27A
C601 4.7/16
C602 4.7/16
C603 1/50
LED606 ~ LED610
PEAK PROG. METER
11.0
IC601 LED METER DRIVE
PLAY 5.5
OTHER 5
R468
R470
D456
VOLTAGE CONTROL
L COUNTER C.B
4ST-01ZS1 FL1
TAPE COUNTER DECK II
D651~D653 1SS177
S601 COUNTER RESET
D651 RD22EB
D652
R652
R653 220K
R654 1K
D653
C652 1/50
R655 150
R659 33
CN9 TO MAIN C.B PIN9
TO KEY C.B PIN23
CN23 LED628
CN3
CN4
Rch
LED621
LED622
LED623
LED624
LED625
LED626
LED627
LED629
LED630
R621 1.5K
R622 1.5K
R623
D624 1SS177
R624 560
R625 1.5K
R626 680
R627 1.5K
R630 4.7 1/4
Q651 2SA1015GR
R656 10K
R657 6.8K
R658 47K
D654 HZ6B1L
U ONLY
IC651 HD38702A-37
G1 G0 a b c d e f g
G2 G3
VFL
TO MAIN C.B PIN7
U/D
CN7
REAL PULSE
Q651 COUNTER RESET (AT POWER ON)
C653 10/16
PP
R651 30K
C651 100P
CN8
PIN8
IC651 FL COUNTER CONTROLER
-7.0
D357 DS446
C363 47/25
D356 DS446
C364 220/10
VOLTAGE CONST. (LOGIC PART)
Q353
Q352 VOLTAGE CONST.
C TR C.B
Q353 2SD1275
R359 4.7 (1/2W)
FR
22.0
5.0
11.0
Q352 2SD1276
Q351 2SA1358
R351 22K
IC351 L78M12
R355 100
R352 2.2K(1/4W)
R353 220
C354 22/35
Q354 2SC2785
R354 47K
C355 22.0
C353 2200/50
R360 220K
C360 47/10
R357 1.2K
C361 10/16
R358 1.2K
C359 100/25
R356 2.2K
C356 47/25
C357 47/10
R812
12.0
RET
LN217RP
IC351 VOLTAGE REGULATOR
Q351 VOLTAGE ON/OFF CONTROL
D351
R364 10K
R363 100K
Q356
R365 33
2SC1815GR
C362 10/16
R366 820
R367 820
D353
D354
D352 2B4B41
C351 0.01 50V
C352 0.01 50V
PIN30 AC 17.0
PIN30 AC 3.0
R223 27K
HM
M
CRO
D412
D408
D409
D410
D411
D404
D405
D406
D407
R416 220K
R419 10K
R418 10K
R417 10K
R415 10K
MI
CRI
MII
CRII
II LH 0
II CrO2 11.0
II MT 1.5
II LH 11.0
II CrO2 11.0
II MT 2.0
Q401~Q405 2SA1015GR
II LH 0
II CrO2 0.5
II MT 11.0
I LH 0
I CrO2 0
I MT 11.0
I LH 0
I MT
I CrO2 11.0
Q402
Q401
Q403
Q404
Q405
Q406
R405 22K
R404 47K
R401 47K
R402 47K
I LH 11.0
OTHER 10.5
R406 22K
R407 2.2K
D402 1SS177
D401 1SS177
R403 47K
R408 47K
R409 22K
R410
R411 22K
R412 2.2K
R413 22K
R414 22K
2SC1815GR
I LH 11.0
I CrO2 11.0
I MT 10.5
II LH 11.0
II CrO2 10.5
II MT 1.5
II LH 11.0
II CrO2 11.0
II MT 10.5
D403
REC I
Q401~406 AUTO TAPE SERECTOR
PIN7
CrO II b7 D16
MT II b6 D15
CR I b5 D17
MT I b4 D18
-VFL b3 E3
b2 E1
P.T b1 E2


J1
PHONES
Q141 143
DOLBY NR OFF/B/C SW
A a1 D6
E a2 D10
D a3 D9
C a4 D8
D21
V TIMER C,B
PIN22
R715 100 1W
R705 10K
IC705 M5218L
C701 0.1/50
R701 390K
R703 180K
CN211
PIN211
C703 220/10
R709 22
C711 220/16
R707 270K
R713 10K
C705 10/16
R711 330
CN221
J703 LINE OUT
J701 LINE IN
PLAY 0 OTHER 0.6
PLAY 10.5 OTHER 11.0
PLAY 11.0 OTHER 0
2SA1015GR
Q141
D141
D142
D143
R145 1K
R146 3.3K
1SS177
D141,142 1SS177
R147 47K
R148 47K
R149 100K
Q142
2SC1815GR
D143,144 1SS177
D145,146 1SS177
Q143 2SA1015GR
D144
D145
R150 47K
R151 47K
DUBB 11.0 OTHER 10.5
D146
DUBB 0 OTHER 0
R143 10K
C143 47/25
R144 8.2K
D147 1SS177
I REC/PLAY 2.0 OTHER 11.0
I REC/PLAY 2.0 OTHER 0
J DOLBY SW2 C.B
I DD S
COM
S1 S2
B C
S1 DOLBY B
S2 DOLBY C
PIN15
CN15
E DOLBY SW1 C.B
II DD S
S1 DOLBY-NR
DOLBY B
OFF
DOLBY C
CN17
PIN17
R152 47K
DUB a6 D26
O MOTOR I a7 D1
D22
HIGH a9 D12
NORM a10 D11
O-REC I a11 D13
O-REC II a12 D14
B a13 D7
PBI a14 D25
DUBB
MS I OUT a15 D27
DOLBY C.B
-7.7dB
R519 47K
C505 0.01
IC501 M5201
22K
R507
C503 4.7/50
MONI (16)
R505 18K
R451 33K
6.0
R515 2.7K
R517 560
C507 4.7/50
10.5
R511 4.7K
TP
D454 HZ6B1L
Q453 2SC2001K
RCH
R459 2.2K
R457 4.7K
R513 15K
Q453 LINE MUTE
-7.7dB
REC OUT
OFF 4.0
B 6.5
C 8.0
VGG VGG OFF/B/C R/P
R509 330K
RCH
D451
RD2.2EB
Q451 2SC1815GR
C501 2.2/50
R453 10K
R141 47K
R142 47K
REC 6.0
PB 0
Q451
METER MUTE
D452
R455 2.2K
D452,453 1SS177
D453
VM
R471 470K
R251 680K
5.0
R253 1.8K
R249 270K
R252 1M
R254 470K
D214
1SS177
R255 2.2K
R257 47K
R248 100K
R250 27K
C248 100/10
C249 1/50
µPD4069 Q241
P.MS SW
(AT P.MS PLAY SEACH ON)
Q457
D457
C457 4.7/50
F VOLUME C.B
VR
PIN19
CN19
R109 12K
R111 2.2K
10K(A)
C107 2.2/50
PIN18
CN18
VR1
RECORD LEVEL
-13dB
BPF
MPX
C105 0.0033
IC101
C103 10/16
R107 2.7K
REC IN PUT BUFFER AMP
IC101 M5218L
12.0
R105 150K
R101 15K
-13dB
C101 1/50
R103 82K
Q455
LINE MUTE DRIVE
Q455 2SA1015GR
MS II OUT a16 D20
R290 680K
12P
R291 1M
R294 1.8K
R292 470K
R295
C289 100/10
R289 27K
D281 1SS177
R293 2.2K
C288 1/50
D457 1SS177
Q457 2SC1815GR
G LED C.B
LED601 ~ LED605
PEAK PROG. METER
+6 +3 0 -3 -6
R602 1.5K
R601 1.5K
R
L
IC601 IR2E27A
C601 4.7/16
C602 4.7/16
C603 1/50
SRE
11.0
LED606 ~ LED610
PEAK PROG. METER
R468 47K
R467 3.9K (1/4W)
5.5
PLAY 5.5 OTHER 5.0
D455 HZ6B1L
R469 47K
LMT a17 D24
R470 220K
D456 1SS177
Q355,356
VOLTAGE ON/OFF CONTROL
D651~D653 1SS177
S601 COUNTER RESET
D651 RD22EB
D652
CN9 TO MAIN C.B PIN9
TO KEY C.B PIN23
CN23
LED628
CN3
CN4
Rch
LED623
LED621
LED622
LED624
LED625
LED626
LED627
LED629
LED630
D624 1SS177
R621 1.5K
R622 1.5K
R624 560
R625 33K
R626 680
R627 1.5K
R653 220K
R654 1K
D653
C652 1/50
R655 150
R659 33
Q651 2SA1015GR
R657 6.8K
R658 47K
R656 10K
R630 4.7 1/4
U ONLY
D654 HZ6B1L
TO MAIN C.B PIN7
REAL PULSE
Q651
COUNTER RESET (AT POWER ON)
IC601
LED METER DRIVE
U/D
CN7
-7.0
C364 220/10
D357 DS446
C363 47/25
D356 DS446
R651 30K
C651 100P
PP
CN8
PIN8
VOLTAGE CONST. (LOGIC PART)
Q353
Q352
VOLTAGE CONST.
C TR C.B
22.0
2SD1275
Q353
5.0
R359 4.7 (1/2W)
FR
6.0
11.0
Q352 2SD1276
Q351 2SA1358
R351 22K
IC351 L78M12
R355
R354 47K
R352 2.2K(1/4W)
R353 220
C354 22/35
12.0
C356 47/25
C355 0.01
R356 2.2K
R812
C357 47/10
470/16
R357 1.2K
R360 220K
C360 47/10
C361 10/16
R358 1.2K
C359 100/25
RET
LN217RP
Q354 2SC2785
C353 2200/50
22.0
D351
R364 10K
R363 100K
20.0
Q356
R365 33
C362 10/16
2SC1815GR
1SS177
I POWER SW C.B
ON
OFF
S1 POWER
11V VM a18 D5
RESET a19 D19
+5V a20 D3
AC 17.0
R366 820
R367 820
D353,D354 DS446 X2
PT1
D353
D354
D352 2B4B41
C351 0.01 50V
C352 0.01 50V
PIN30 AC 17.0
AC 3.0 PIN30
AC 3.0 REC MUTE I a21 D23
Q POWER C.B
240V 220V 120V
S3 VOLTAG SELECTOR
C365 0.01
NF1
AC 120V,220V,240V 50/60Hz
H MODEL ONLY
Q POWER C.B
C365 0.01
NF1
E MODEL AC220V 50/60Hz
U MODEL AC120V 60Hz
E,U MODELS ONLY
I LH 0
I MT
I CrO2 11.0
Q401
R402 47K
I LH 11.0 OTHER 10.5
D401 1SS177
R403 47K
Q401~406
AUTO TAPE SERECTOR
LH 11.0 CrO2 11.0 MT 10.5
LH 11.0 CrO2 11.0 MT 10.5
IC351 VOLTAGE REGULATOR
Q351 VOLTAGE ON/OFF CONTROL
PIN7
-VFL b3 E3
b2 E1
P.T b1 E2

WIRING (AD-A70)



1
2
3
4
5
6
7
8
9
10
11
A
B
C
D
E
F
G
H
I
J
K
N MOTOR C.B
M4
BANKING MOTOR
M3
LOADING MOTOR
S SW1 C.B
S2
B1 SW
S3
GEAR SW
K SW2 C.B
S4
CO SW
F VOLUME C.B
VR1
RECORD LEVEL
VR1-2
VR1-1
TO A MAIN C.B PIN19
CN19
TO A MAIN C.B PIN18
CN18
WHT
PNK
GRY
BRN
V TIMER C.B
S1
TIMER
EVERY REC
CONTROL
PLAY
REC
DECK I
DECK II
TO A MAIN C.B PIN20
CN20
ORG
ORG
BRN
J1
PHONES
82 110 627 21
CN22
TO A MAIN C.B PIN22
BLK
RED
CN21
TO A MAIN C.B PIN21
CN16
TO A MAIN C.B PIN16
RED
WHT
TO A MAIN C.B PIN14
CN14
GRN
BRN
CN13
TO A MAIN C.B PIN13
J DOLBY SW2 C.B
S1
DOLBY B
S2
DOLBY C
CN15
TO A MAIN C.B PIN15
E DOLBY SW1 C.B
S1
DOLBY B-C NR
(DECK I) B←→OFF←→C
(DECK II) C←→OFF←→B
CN17
TO A MAIN C.B PIN17
BLU
BLU
BRN
I POWER SW C.B
S1
POWER SW
82 110 630 21
OFF←→ON
CN12
TO A MAIN C.B PIN12
G KEY C.B
S19, LED47
RECORD
S5
MEMORY
S4
NEXT
S3
UP
S2
DOWN
S1
PROGRAM
TAPE NO
S12
5
S11
4
S10
3
S9
2
82-121-601-01
FPK-N1
TO A MAIN C.B PIN24
CN24
RED
WHT
BLU/WHT
ORG/WHT
BLK/WHT
BRN/WHT
TO M LED C.B PIN23
CN23
CHASSIS GND
S31
DECK II REVERSE MODE
S29, LED46
REC MUTE
S28, LED45
PAUSE
S27
STOP
S26
MS
S25, LED44
PLAY
S24, LED43
REV PLAY
S23
MS
MUSIC SENSOR
S7, LED42
HIGH
S6, LED41
NORMAL
SYNCHRO DUBBING I ▷ II
S18, LED40
PAUSE
S17
STOP
S16
FWD SKIP

NOTES:

1) The voltage is the reference value measured with a tester (20 k-ohms/V DC) when there are no signals. An asterisk (*) indicates that the value was measured with a vacuum-tube voltmeter during recording.
2) Resistors with no designation have a rated power of 1/8W and a tolerance of ±5%.
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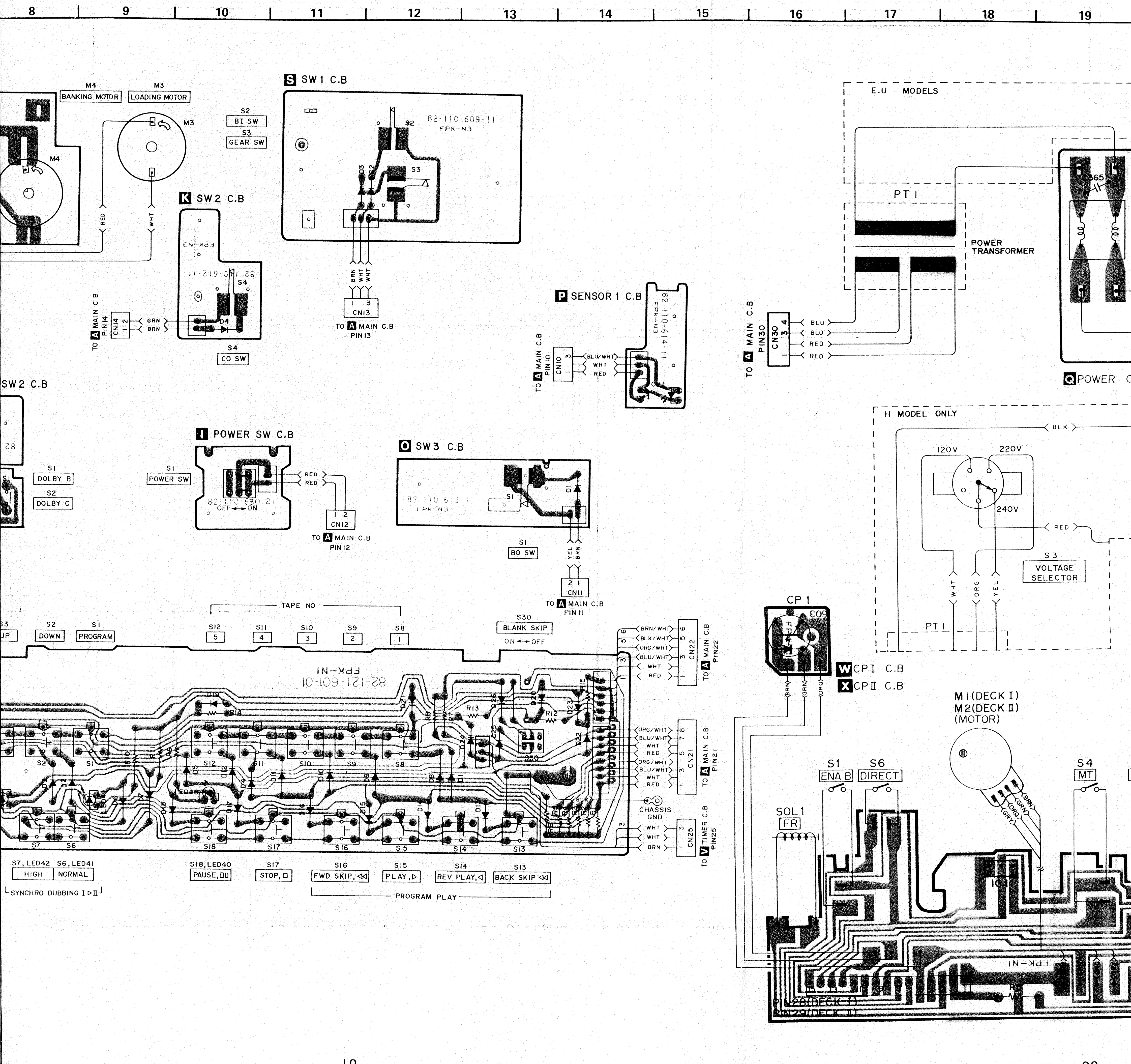
4) The only capacitor tolerance indicated are ±5% (J) and ±10% (K).
5) Ceramic capacitor symbols:
   - For temperature compensation (SL)
   - High dielectric constant system (YY)
   - High dielectric constant system (YW, YP, YZ)
   - Semiconductor ceramic
   - For temperature compensation (SH)
6) Explanation of symbols
   - Ⓜ Mylar capacitor
   - Ⓐ Aluminum solid capacitor
   - (PP) Polypropylene film capacitor
   - (BP) Bi-polarized capacitor
   - (LL) Low-leakage capacitor
   - Ⓣ Tantalum capacitor
   - Ⓢ Styrol capacitor
   - Printed resistor
   - Fuse resistor

⚠ Safety component symbol

This symbol is given to important parts which se maintain the safety of the product, and which are to conform to special safety specifications.

Therefore, when replacing a component wit symbol, make absolutely sure that you use a de ed part.

- This schematic diagram is subject to change w notice in the interests of improved performance.


8
9
10
11
12
13
14
15
16
17
18
19
M4 BANKING MOTOR
M3 LOADING MOTOR
S2 BI SW
S3 GEAR SW
S SW1 C.B
82-110-609-11 FPK-N3
K SW2 C.B
82-110-612-11
S4 CO SW
TO A MAIN C.B PIN14
CN14
TO A MAIN C.B PIN13
CN13
P SENSOR 1 C.B
82-110-614-11
TO A MAIN C.B PIN10
CN10
BLU/WHT
WHT
RED
TO A MAIN C.B PIN30
CN30
BLU
RED
E.U MODELS
PT1
POWER TRANSFORMER
Q POWER
H MODEL ONLY
BLK
120V
220V
240V
S3 VOLTAGE SELECTOR
SW2 C.B
S1 DOLBY B
S2 DOLBY C
I POWER SW C.B
S1 POWER SW
82-110-630-21
OFF ← → ON
TO A MAIN C.B PIN12
CN12
O SW3 C.B
82-110-613-11 FPK-N3
S1 BO SW
TO A MAIN C.B PIN11
CN11
TAPE NO
S3 UP
S2 DOWN
S1 PROGRAM
S12 5
S11 4
S10 3
S9 2
S8 1
S30 BLANK SKIP
ON ← → OFF
82-121-601-01 FPK-N1
TO A MAIN C.B PIN22
CN22
TO A MAIN C.B PIN21
CN21
CHASSIS GND
TO V TIMER C.B PIN25
CN25
S7, LED42 HIGH
S6, LED41 NORMAL
SYNCHRO DUBBING I ▷ II
S18, LED40 PAUSE, ▯▯
S17 STOP, □
S16 FWD SKIP, ◁◁
S15 PLAY, ▷
S14 REV PLAY, ◁
S13 BACK SKIP ◁◁
PROGRAM PLAY
CP1
W CP I C.B
X CP II C.B
M1 (DECK I)
M2 (DECK II)
(MOTOR)
S1 ENA B
S6 DIRECT
S4 MT
SOL1 FR
PIN20 (DECK I)
PIN29 (DECK II)

NOTES:

1) The voltage is the reference value measured with a tester (20 k-ohms/V DC) when there are no signals. An asterisk (*) indicates that the value was measured with a vacuum-tube voltmeter during recording.
2) Resistors with no designation have a rated power of 1/8W and a tolerance of ±5%.
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   - ─┤├Y─ High dielectric constant system (YY)
   - ─┤├─ High dielectric constant system (YW, YP, YZ)
   - ─•┤├─ Semiconductor ceramic
   - ─⊛┤├─ For temperature compensation (SH)
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   - Ⓣ Tantalum capacitor
   - Ⓢ Styrol capacitor
   - ─[WW]─ Printed resistor
   - ─[W~]─ Fuse resistor

⚠ Safety component symbol
This symbol is given to important parts which serve to maintain the safety of the product, and which are made to conform to special safety specifications.
Therefore, when replacing a component with this symbol, make absolutely sure that you use a designated part.

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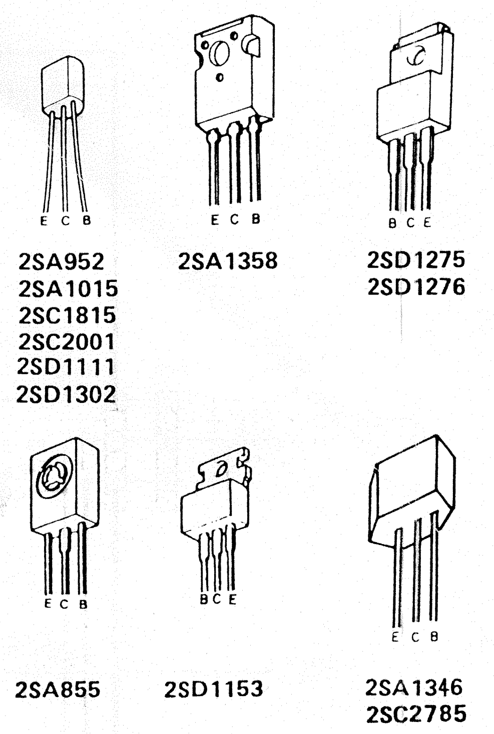
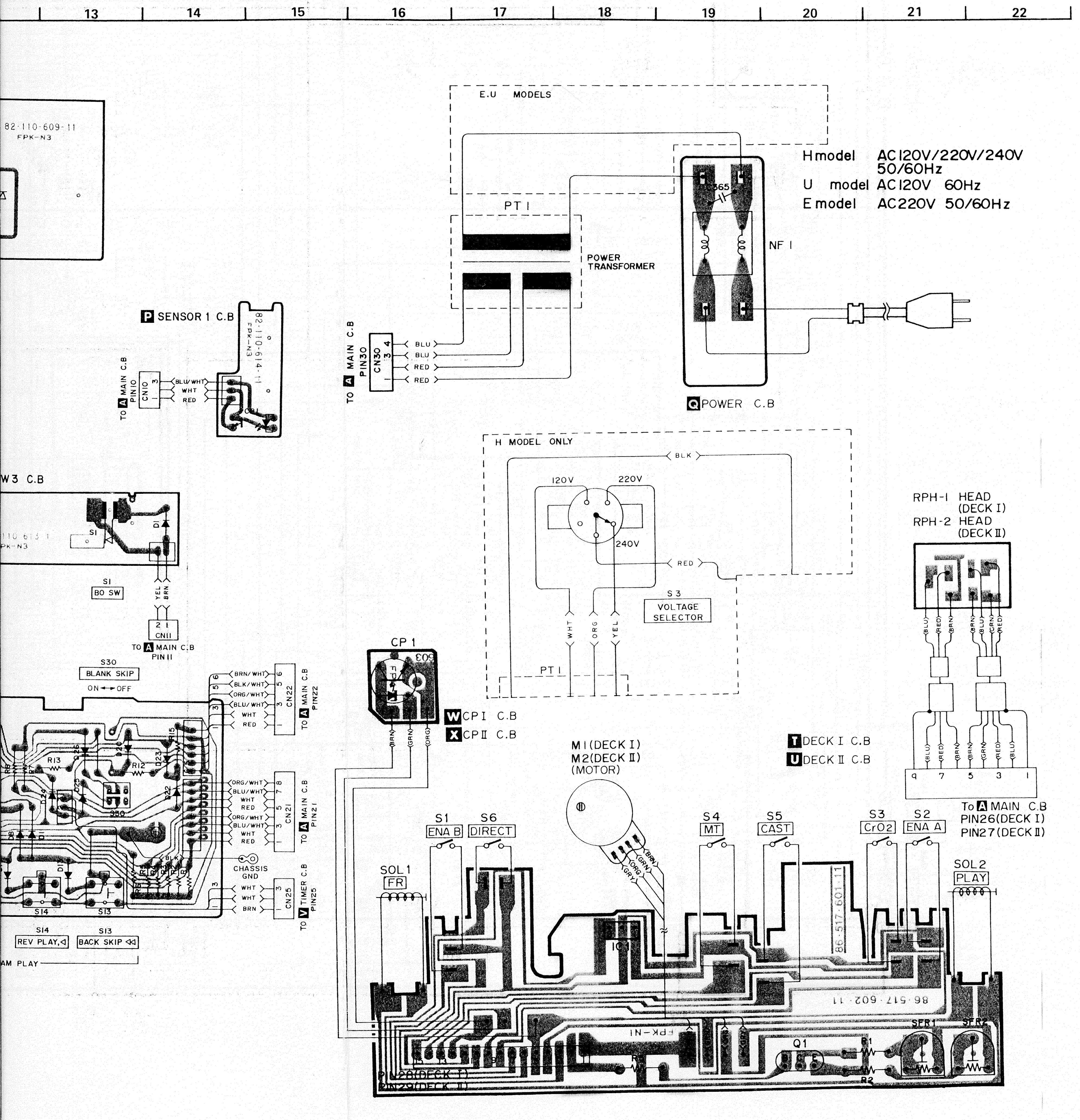
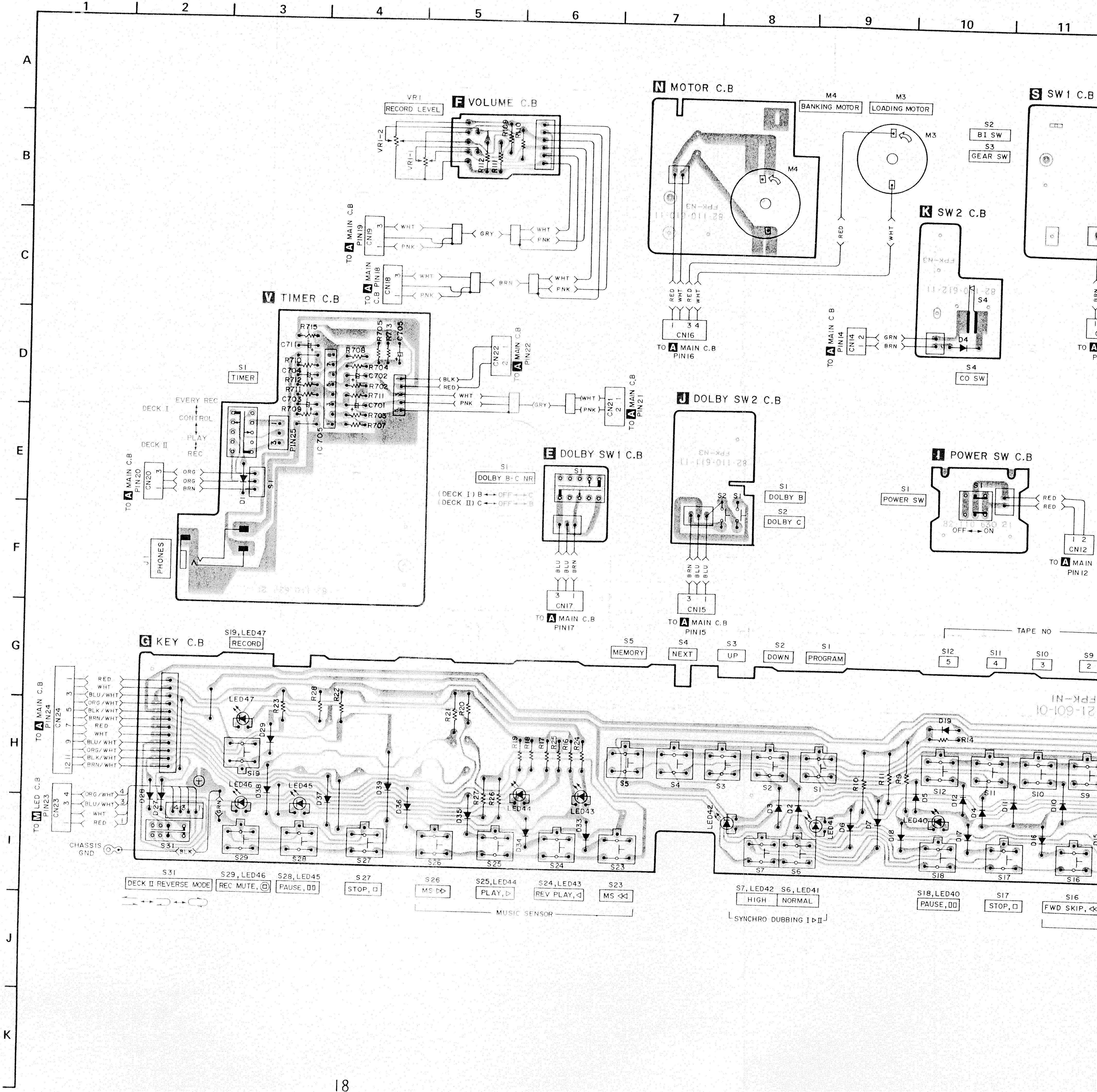

E C B
E C B
B C E
2SA952
2SA1015
2SC1815
2SC2001
2SD1111
2SD1302
2SA1358
2SD1275
2SD1276
E C B
B C E
E C B
2SA855
2SD1153
2SA1346
2SC2785


13
14
15
16
17
18
19
20
21
22
82-110-609-11
FPK-N3
E.U MODELS
PT I
POWER TRANSFORMER
R365
NF I
H model AC120V/220V/240V 50/60Hz
U model AC120V 60Hz
E model AC220V 50/60Hz
Q POWER C.B
P SENSOR 1 C.B
82-110-614-11
FPK-N3
TO A MAIN C.B PIN10
CN10
BLU/WHT
WHT
RED
TO A MAIN C.B PIN30
CN30
BLU
BLU
RED
RED
H MODEL ONLY
BLK
120V
220V
240V
RED
S3
VOLTAGE SELECTOR
WHT
ORG
YEL
PT I
W3 C.B
S1
D1
S1
BO SW
YEL
BRN
CN11
TO A MAIN C.B PIN11
S30
BLANK SKIP
ON ←→ OFF
BRN/WHT
BLK/WHT
ORG/WHT
BLU/WHT
WHT
RED
CN22
TO A MAIN C.B PIN22
R13
R12
R15
D20
D22
D23
D24
D25
D26
S30
ORG/WHT
BLU/WHT
WHT
RED
ORG/WHT
BLU/WHT
WHT
RED
CN21
TO A MAIN C.B PIN21
BLK
CHASSIS GND
WHT
WHT
BRN
CN25
TO V TIMER C.B PIN25
S14
S13
S14
REV PLAY,◁
S13
BACK SKIP ◁◁
AM PLAY
CP 1
W CP I C.B
X CP II C.B
BRN
GRN
ORG
M I (DECK I)
M2(DECK II)
(MOTOR)
BRN
GRN
ORG
GRY
T DECK I C.B
U DECK II C.B
RPH-I HEAD (DECK I)
RPH-2 HEAD (DECK II)
BLU
RED
BRN
BRN
BLU
GRN
BLU
RED
GRN
BRN
GRN
RED
BLU
9
7
5
3
1
To A MAIN C.B PIN26(DECK I) PIN27(DECK II)
S1
ENA B
S6
DIRECT
S4
MT
S5
CAST
S3
CrO2
S2
ENA A
SOL 1
FR
SOL 2
PLAY
86-517-601-11
86-517-602-11
FPK-N1
IC1
Q1
R1
R2
SFR1
SFR2
PIN28(DECK I)
PIN29(DECK II)

WIRING (AD-A70)



1 2 3 4 5 6 7 8 9 10 11
A B C D E F G H I J K
F VOLUME C.B
VR1 RECORD LEVEL
VR1-2
VR1-1
R109
R110
R111
R112
TO A MAIN C.B PIN19 CN19
TO A MAIN C.B PIN18 CN18
WHT
PNK
GRY
BRN
N MOTOR C.B
M4 BANKING MOTOR
M3 LOADING MOTOR
M3
M4
82-110-610-11
FPK-N3
RED WHT RED WHT
CN16
TO A MAIN C.B PIN16
S SW1 C.B
S2 B1 SW
S3 GEAR SW
K SW2 C.B
82-110-612-11
S4
D4
S4 CO SW
TO A MAIN C.B PIN14 CN14
GRN
BRN
V TIMER C.B
R715
R705
R713
C705
C711
R708
R710
C704
R712
R711
C703
R709
R704
C702
R702
C701
R703
R707
IC705
PIN25
S1 TIMER
DECK I
EVERY REC
CONTROL
PLAY
REC
DECK II
TO A MAIN C.B PIN20 CN20
ORG
ORG
BRN
D1
S1
J1 PHONES
BLK
RED
WHT
PNK
CN22
TO A MAIN C.B PIN22
CN21
TO A MAIN C.B PIN21
J DOLBY SW2 C.B
82-110-611-11
S2 S1
S1 DOLBY B
S2 DOLBY C
BRN BLU BLU
CN15
TO A MAIN C.B PIN15
E DOLBY SW1 C.B
S1 DOLBY B-C NR
(DECK I) B←→OFF←→C
(DECK II) C←→OFF←→B
BLU BLU BRN
CN17
TO A MAIN C.B PIN17
I POWER SW C.B
S1 POWER SW
82-110-630-21
OFF←→ON
RED
RED
CN12
TO A MAIN PIN12
G KEY C.B
S19,LED47 RECORD
S5 MEMORY
S4 NEXT
S3 UP
S2 DOWN
S1 PROGRAM
TAPE NO
S12 5
S11 4
S10 3
S9 2
TO A MAIN C.B PIN24 CN24
RED
WHT
BLU/WHT
ORG/WHT
BLK/WHT
BRN/WHT
RED
WHT
BLU/WHT
ORG/WHT
BLK/WHT
BRN/WHT
TO M LED C.B PIN23 CN23
ORG/WHT
BLU/WHT
WHT
RED
CHASSIS GND
BLK
LED47
LED46
LED45
LED44
LED43
LED42
LED41
LED40
R23
R28
R22
R21
R20
R19
R18
R17
R25
R16
R24
R27
R26
R10
R11
R9
R14
D29
D28
D27
D38
D37
D39
D36
D35
D34
D33
D3
D2
D6
D7
D18
D5
D12
D4
D11
D17
D16
D10
D19
S19
S31
S29
S28
S27
S26
S25
S24
S23
S5
S4
S3
S2
S1
S7
S6
S18
S17
S16
FPK-N1
21-601-01
S31 DECK II REVERSE MODE
S29,LED46 REC MUTE,
S28,LED45 PAUSE,
S27 STOP,
S26 MS
S25,LED44 PLAY,
S24,LED43 REV PLAY,
S23 MS
MUSIC SENSOR
S7,LED42 HIGH
S6,LED41 NORMAL
SYNCHRO DUBBING I▷II
S18,LED40 PAUSE,
S17 STOP,
S16 FWD SKIP,

NOTES:

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   - High dielectric constant system (YW, YP, YZ)
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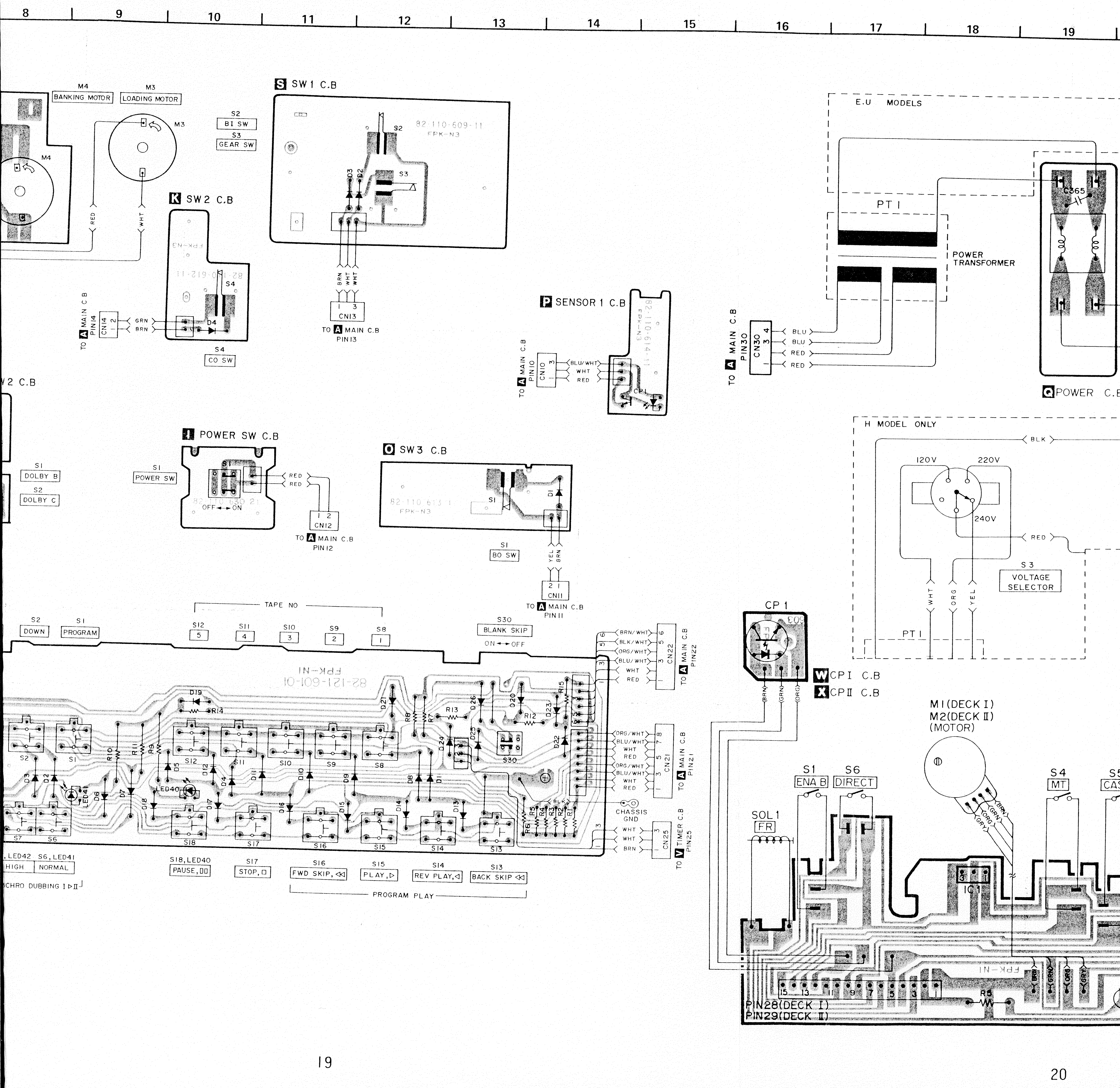
   - Ⓢ Styrol capacitor
   - Printed resistor
   - Fuse resistor

⚠ Safety component symbol

This symbol is given to important parts which se maintain the safety of the product, and which are to conform to special safety specifications. Therefore, when replacing a component wit symbol, make absolutely sure that you use a des ed part.

- This schematic diagram is subject to change wi notice in the interests of improved performance.



8
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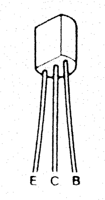
18
19
M4
BANKING MOTOR
M3
LOADING MOTOR
S2
B1 SW
S3
GEAR SW
S SW1 C.B
82-110-609-11
FPK-N3
D3
D2
S2
S3
BRN
WHT
WHT
CN13
TO A MAIN C.B PIN13
K SW2 C.B
S4
D4
GRN
BRN
CN14
TO A MAIN C.B PIN14
S4
CO SW
RED
WHT
2 C.B
P SENSOR 1 C.B
BLU/WHT
WHT
RED
CN10
TO A MAIN C.B PIN10
CP1
E.U MODELS
PT1
POWER TRANSFORMER
C365
BLU
BLU
RED
RED
CN30
TO A MAIN C.B PIN30
Q POWER C.B
H MODEL ONLY
BLK
120V
220V
240V
RED
S3
VOLTAGE SELECTOR
WHT
ORG
YEL
PT1
S1
DOLBY B
S2
DOLBY C
S1
POWER SW
J POWER SW C.B
OFF ←→ ON
RED
RED
CN12
TO A MAIN C.B PIN12
O SW3 C.B
82-110-613-11
FPK-N3
S1
D1
S1
BO SW
YEL
BRN
CN11
TO A MAIN C.B PIN11
CP1
W CPI C.B
X CPII C.B
BRN
GRN
ORG
TAPE NO
S2
DOWN
S1
PROGRAM
S12
5
S11
4
S10
3
S9
2
S8
1
S30
BLANK SKIP
ON ←→ OFF
FPK-N1
82-121-601-01
BRN/WHT
BLK/WHT
ORG/WHT
BLU/WHT
WHT
RED
CN22
TO A MAIN C.B PIN22
ORG/WHT
BLU/WHT
WHT
RED
ORG/WHT
BLU/WHT
WHT
RED
CN21
TO A MAIN C.B PIN21
CHASSIS GND
WHT
WHT
BRN
CN25
TO V TIMER C.B PIN25
LED40
LED42 S6,LED41
HIGH
NORMAL
CHRO DUBBING I ▷ II
S18,LED40
PAUSE,▯▯
S17
STOP,□
S16
FWD SKIP,⊲⊲
S15
PLAY,▷
S14
REV PLAY,◁
S13
BACK SKIP ⊲⊲
PROGRAM PLAY
M1(DECK I)
M2(DECK II)
(MOTOR)
S1
ENA B
S6
DIRECT
S4
MT
S5
CA
SOL1
FR
IC1
R5
FPK-N1
PIN28(DECK I)
PIN29(DECK II)

NOTES:

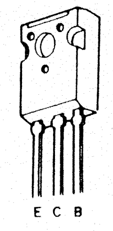
1) The voltage is the reference value measured with a tester (20 k-ohms/V DC) when there are no signals. An asterisk (*) indicates that the value was measured with a vacuum-tube voltmeter during recording.
2) Resistors with no designation have a rated power of 1/8W and a tolerance of ±5%.
3) Capacitors with no designation have a dielectric strength of less than 50WV.
4) The only capacitor tolerance indicated are ±5% (J) and ±10% (K).
5) Ceramic capacitor symbols:
   - For temperature compensation (SL)
   - High dielectric constant system (YY)
   - High dielectric constant system (YW, YP, YZ)
   - Semiconductor ceramic
   - For temperature compensation (SH)
6) Explanation of symbols
   - Ⓜ Mylar capacitor
   - Ⓐ Aluminum solid capacitor
   - (PP) Polypropylene film capacitor
   - (BP) Bi-polarized capacitor
   - (LL) Low-leakage capacitor
   - Ⓣ Tantalum capacitor
   - Ⓢ Styrol capacitor
   - Printed resistor
   - Fuse resistor

⚠ Safety component symbol
This symbol is given to important parts which serve to maintain the safety of the product, and which are made to conform to special safety specifications.
Therefore, when replacing a component with this symbol, make absolutely sure that you use a designated part.

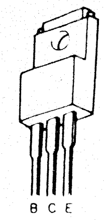
- This schematic diagram is subject to change without notice in the interests of improved performance.



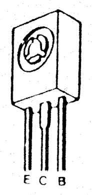
2SA952
2SA1015
2SC1815
2SC2001
2SD1111
2SD1302



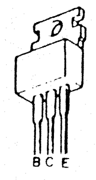
2SA1358



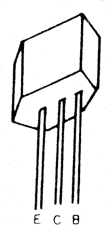
2SD1275
2SD1276



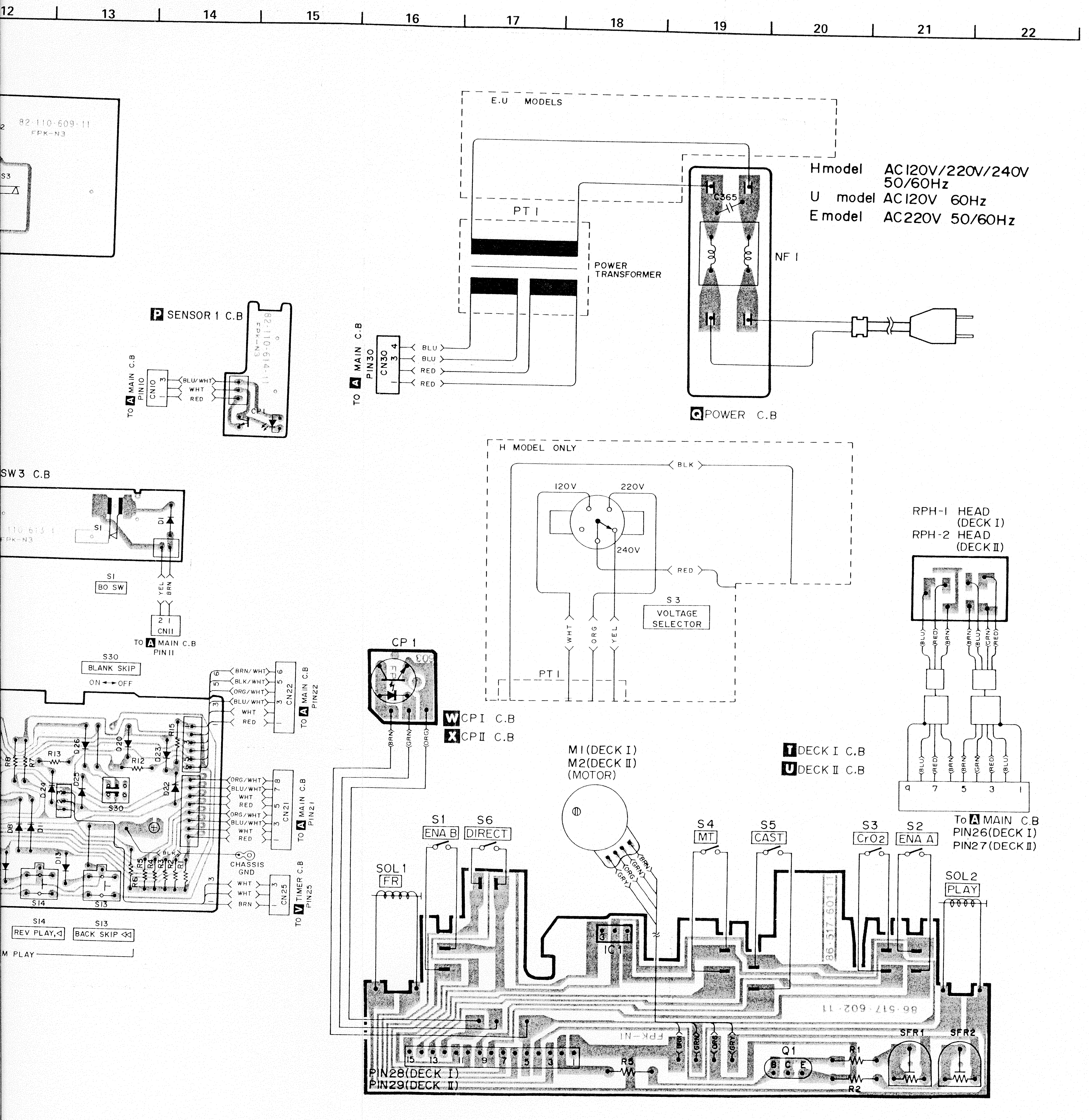
2SA855



2SD1153



2SA1346
2SC2785


12
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21
22
82-110-609-11
FPK-N3
S3
E.U MODELS
PT I
POWER TRANSFORMER
C365
NF I
H model AC120V/220V/240V 50/60Hz
U model AC120V 60Hz
E model AC220V 50/60Hz
Q POWER C.B
P SENSOR 1 C.B
82-110-614-11
FPK-N3
CP1
TO A MAIN C.B PIN10
CN10
BLU/WHT
WHT
RED
TO A MAIN C.B PIN30
CN30
BLU
BLU
RED
RED
SW3 C.B
S1
D1
S1 BO SW
YEL
BRN
CN11
TO A MAIN C.B PIN11
S30 BLANK SKIP
ON ←→ OFF
R13
D26
D20
D23
R15
R12
R8
R7
D24
D25
S30
D22
D13
R5
R4
R3
R2
R1
R6
BRN/WHT
BLK/WHT
ORG/WHT
BLU/WHT
WHT
RED
CN22
TO A MAIN C.B PIN22
CN21
TO A MAIN C.B PIN21
CHASSIS GND
CN25
TO V TIMER C.B PIN25
S14 REV PLAY ◁
S13 BACK SKIP ◁◁
M PLAY
H MODEL ONLY
BLK
120V
220V
240V
RED
S3 VOLTAGE SELECTOR
WHT
ORG
YEL
PT I
CP 1
BRN
GRN
ORG
W CP I C.B
X CP II C.B
M I (DECK I)
M2 (DECK II)
(MOTOR)
T DECK I C.B
U DECK II C.B
RPH-1 HEAD (DECK I)
RPH-2 HEAD (DECK II)
To A MAIN C.B PIN26 (DECK I) PIN27 (DECK II)
S1 ENA B
S6 DIRECT
S4 MT
S5 CAST
S3 CrO2
S2 ENA A
SOL 1 FR
SOL 2 PLAY
IC1
86-517-601-11
86-517-602-11
FPK-N1
Q1
B C E
R1
R2
R5
SFR1
SFR2
PIN28 (DECK I)
PIN29 (DECK II)

MECHANICAL PARTS LIST

AD-A70(Alteration Parts List as against FX-A770)

- ✱-mark in this part list shows exclusive part.
- ★-mark means less required items and availabilities may be limited.

Part No. Changed to	Ref No.	Part No.	Description	Common Model	Q't y	
	1-2	★82-115-202	T-SPRING, EJECT		1	
	1-3	★82-121-009	FRONT CABINET 2 (B) EX Ass'y F	※	1	
	1-14	82-121-007	DOOR CASSETTE Ass'y	※	1	
	1-36	★82-110-035	STEEL CABINET H (B) (H only)		1	
		★82-110-022	STEEL CABINET (B) (U, E only)		1	
	1-49	★87-034-732	AC POWER CORD Ass'y (H only)		1	
		★87-034-731	AC POWER CORD Ass'y (U only)		1	
		★87-034-736	AC POWER CORD Ass'y (E only)		1	
	2-22	★82-110-228	COVER, RELAY CIRCUIT BOARD		1	
			(H, U only)		1	
		★82-110-229	COVER, RELAY CIRCUIT BOARD		1	
			EX Ass'y (E only)		1	

■ ACCESSORIES/PACKAGE LIST

Part No. Changed to	Ref.No.	Part No.	Description	Common Model	Q'ty	
	1	★82-121-901	INSTRUCTION BOOKLET (H, E ONLY)	※	1	
	2	★82-121-902	INSTRUCTION BOOKLET (U ONLY)	※	1	
	3	★82-141-022	CASSETTE BANK ASS'Y		2	
	4	★87-034-978	CW-254 BSK		2	